



ACCESSORIES **2025**



OVERVIEW



BE-01

Inflow and Outflow Calming-Section for Flowmeters



Features

- / Brass or stainless steel versions
- / O-Ring or flat seal
- / Inflow section length 10 x DN
- / Outflow section length 5 x DN
- / Easy to mount
- / Pressure up to PN 350
- / Temperature up to 160°C
- / High chemical resistance
- / Thread as per DIN EN ISO 228-1

Description:

The BE-01 inflow and outflow sections are developed to produce a rectification of the flow profile, as well as to reduce swirl effects and thus allow accurate and repeatable flow measurement. The series BE-01 is made of brass or high quality stainless steel (1.4571) and therefore has a high chemical resistance to a number of industrially used liquids and gaseous media. The process connection is made by connecting thread to DIN EN ISO 228-1 and ensures a quick and safe installation. When using commercially available pipes and fittings as inflow or outflow sections, the seal often poses a danger to the measuring instrument. Thus, for example, excessing sealing material, such as hemp or Teflon® tape, can wind around the sensor and cause a permanent damage. The inflow and outflow sections of the series BE-01 are neatly and securely sealed with O-rings or flat seals.

Application:

BE-01 inflow and outflow sections are suitable for liquids and gaseous media. They can be used everywhere in the industry, where asymmetrical flow affect the measurement. BE-01 are ideally suited as inflow and outflow section for flow sensors, flow meters or flow switches.



Technical Specifications:

Housing material /	brass or stainless steel 1.4571
Process connection /	as per DIN EN ISO 228-1
Seal /	O-ring or flat seal
Media /	liquids or gases
max. Temperature /	160 °C (depending on the O-ring material used)
O-ring NBR:	100 °C
O-ring FKM:	100 °C
O-ring EPDM:	160 °C
Flat seal PTFE:	160 °C
max. Operating pressure /	
with flat seal:	16 bar
with O-ring:	depending on the type (see table)

Dimensions in mm:



Sizes (mm)	G male	G female	DN	L	D	SW
BE-01.1a (G ¼", inflow)				80		
BE-01.1b (G ¼", outflow)	¼"	¼"	8	40	18	16
BE-01.2a (G ½", inflow)				150		
BE-01.2b (G ½", outflow)	½"	½"	15	75	27	24
BE-01.3a (G 1", inflow)				250		
BE-01.3b (G 1", outflow)	1"	1"	25	125	40	36

Op. pressure with O-Ring:

max. Operating pressure	Housing material brass		Housing material stainless steel	
	< 120 °C	< 160 °C	< 120 °C	< 160 °C
BE-01.1a (G ¼", inflow)				
BE-01.1b (G ¼", outflow)	300 bar	140 bar		
BE-01.2a (G ½", inflow)				350 bar
BE-01.2b (G ½", outflow)	260 bar	110 bar		
BE-01.3a (G 1", inflow)				
BE-01.3b (G 1", outflow)	210 bar	90 bar	300 bar	

Ordering Codes:

Order number	BE-01.	2.	1.	1
BE-01 Calming section				
Type /				
1 = G ¼", full set (inflow and outflow)				
1a = G ¼", 1x inflow				
1b = G ¼", 1x outflow				
2 = G ½", full set (inflow and outflow)				
2a = G ½", 1x inflow				
2b = G ½", 1x outflow				
3 = G 1", full set (inflow and outflow)				
3a = G 1", 1x inflow				
3b = G 1", 1x outflow				
Material /				
1 = brass				
2 = stainless steel 1.4571				
Sealing /				
1 = flat seal PTFE				
2 = O-ring NBR (standard for housing material brass)				
3 = O-ring FKM (standard for housing material stainless steel)				
4 = O-ring EPDM				



WS-64

Adapter



Features

- / Economical
- / Temperature decoupling
- / Various materials

Description:

The WS-64 is an adapter according to DIN 16281 for the installation of pressure measuring instruments. Using an adapter could make sense, wherever an instrument can not be connected directly to the pipe. This could be the case, when the plant offers not enough space or the operator wishes to observe all devices conveniently in one place. The WS-64 is also an economical, though not quite as effective, alternative to conventional cooling lines and can be used for temperature decoupling to protect heat-sensitive devices from radiated heat.

Application:

The adapter can be mounted, for example, with a wall-mounting bracket, in order to securely connect a pressure gauge with a hose or pipe. The various materials and connection sizes make the WS-64 versatile for application.



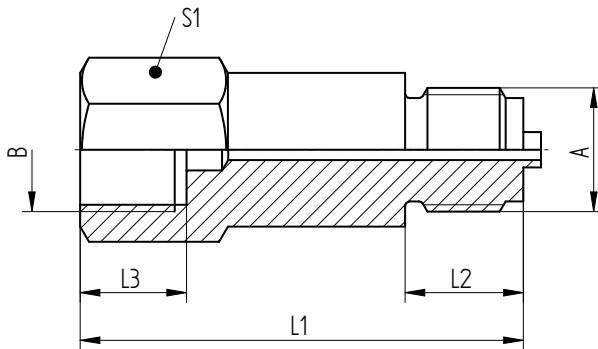
Technical Specifications:

Process connection /	G ½" or G ¼"
max. Pressure /	400 bar / brass 250 bar
max. Temperature /	
Brass:	120°C
Steel:	200°C
Stainless Steel:	200°C
Material /	
Body:	brass, steel, SS 1.4571

Ordering Codes:

Order Number	WS-64.	1.	2
WS-64 Adapter			
Process connection /			
1 = G ½"			
2 = G ¼"			
Material /			
1 = brass (G ½" only)			
2 = steel			
3 = stainless steel 1.4571			

Dimensions in mm:



Version	L1 / mm	L2 / mm	L3 / mm	S1
Brass G ½"	75	20	18	27
Steel G ¼"	69	13	11	27
Steel G ½"	75	20	18	27
SS 1.4571 G ¼"	69	13	11	27
SS 1.4571 G ½"	75	20	18	27



SR-61

Siphon

Features

/ Cost-effective

/ Up to 400°C

/ Up to 160 bar

/ Cooling-line and particle-filtration

Description:

Siphons can be used to protect pressure measuring devices, like pressure gauges, from high temperatures or pressure surges and pulsations. They are available with a straight, circular (DIN 16282 C) or U-shaped (DIN 16282 A) pipe with 90° turn.

Application:

The large surface of the tube will cool the media with the ambient air temperature. Flowing through multiple curves or a circle dampens pressure surges and keeps the pressure at the device constant. A siphon can be used for fluids, gases and even steam. It can be installed with a G ½" connection. The curvature of the pipe also helps to protect the device from particles, since these can be deposited here.



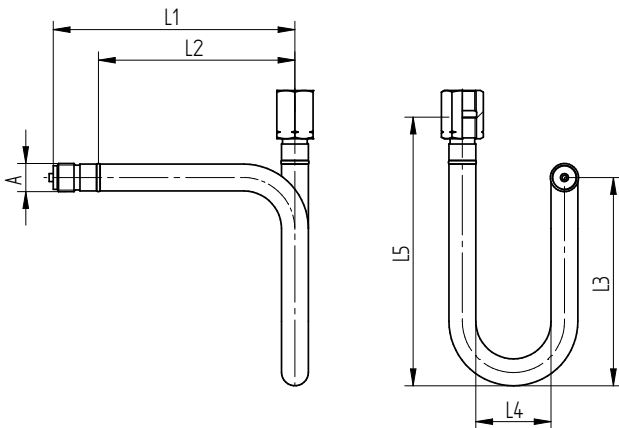
Technical Specifications:

Process connection /	G ½"
max. Pressure /	
at 120°C:	160 bar
at 300°C:	120 bar
at 400°C:	100 bar
Material /	
Body:	steel, SS 1.4571

Ordering Codes:

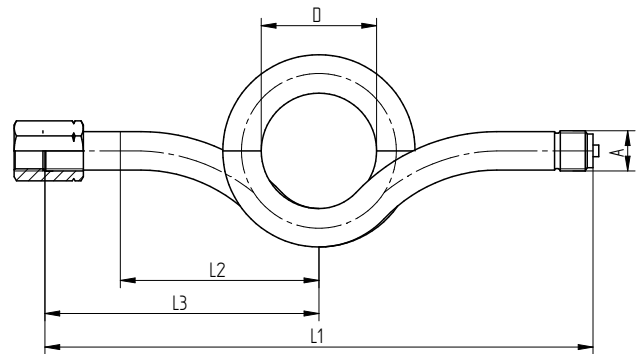
Order number	SR-61.	1.	2
SR-61 Siphon			
Style /			
1 = U-shape (DIN 16282 A)			
2 = U-shape long (DIN 16282 A)			
3 = circular (DIN 16282 C)			
Material /			
1 = steel			
2 = SS 1.4571			

Dimensions in mm (U-Shape):



Version	L1 / mm	L2 / mm	L3 / mm	L4 / mm	L5 / mm
Steel	180	145	155	56	200
Steel (long)	255	220	155	56	200
Stainless Steel	180	145	155	56	200
Stainless Steel (long)	255	220	155	56	200

Dim. in mm (circular):

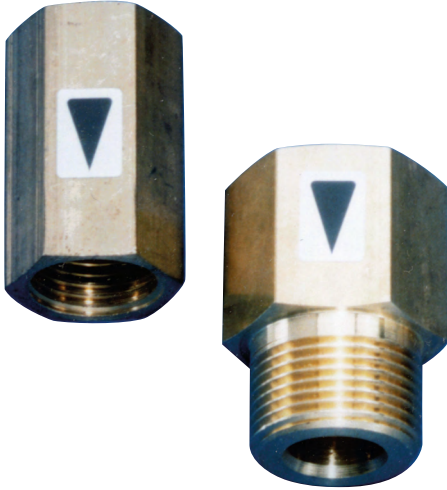


Version	L1 / mm	L2 / mm	L3 / mm	D
Steel	275	95	130	56
Stainless Steel	275	95	130	56



BG-01

Flow Limiter



Features

- / Flow quantity regulation without auxiliary power supply
- / Power-saving by limiting of flow
- / Compact design
- / Easy to mount
- / All-metal version without plastics
- / Brass or stainless steel material

Description:

The BG-01 series of flow limiters has been developed for limiting the flow of water-like media to a particular value. They ensure that the flow value does not exceed even during fluctuating forward or reverse pressures. In contrast to most of the devices of this type normally available in the market, the BG-01 limiters have a stainless steel spring element instead of the commonly used plastic membrane. As a result of the differential pressure occurring over the limiter, the spring element gets pressed more or less against the sealing surface of the housing. The split opening between the sealing surface and the spring varies continually. As a result of the enlargement of the split opening when the pressure falls or, as the case may be, its decrease when the pressure rises, the quantity of fluid passing through the device is maintained at a constant rate.

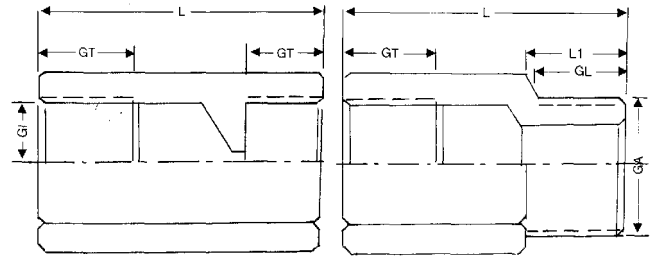
Application:

These devices are used for all water-like media. They can be deployed in water distribution systems in the industry, in sanitary and car-washing installations and in other fields.

Technical Specifications:

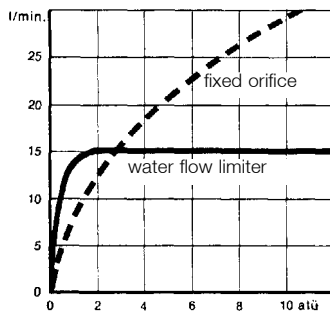
min. Regulating pressure /	2 bar
max. Differential pressure /	10 bar
max. Temperature /	200 °C
Accuracy for H ₂ O at 20°C /	up to 2l/min ± 15% from 3l/min ± 10%
Wetted materials /	
Body:	brass / st. steel 1.4305
Star:	st. steel 1.4310
Cone:	st. steel 1.4301
Rivet:	st. steel 1.4301
Locking ring:	1.4122

Dimensions:

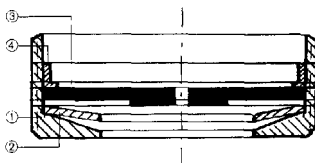


Type	L	GT	GL	GI	GA	SW	L1	Weight g
BG-01.1	43	14		G ½		27		72
BG-01.2	45	15		G ¾		30		125
BG-01.3	43	14	14	G ½	G ½	27	16	104
BG-01.4	45	15	15,5	G ¾	G ¾	30	18	135

Functioning and Structure:



Proportional to the pressure, the free cross section is decreased as the pressure increases. This ensures constant flow quantity.



- 1) housing
- 2) ring funnel
- 3) regulating orifice
- 4) clamp ring

Ordering Codes:

Order number

BG-01.

1.

2.

□□.

0

BG-01 Flow Limiter

Process connection /

- 1 = G ½-female both sides
- 2 = G ¾-female both sides
- 3 = inlet G ½-female, outlet G 1/2-male
- 4 = inlet G ¾-female, outlet G 3/4-male

Material /

- 1 = brass
- 2 = stainless steel

Flow quantity /

[] [] = 01. . . 30l/min in 1l/min steps

Special version /

- 0 = none
- 1 = please specify in detailed text

Flow quantities:

1 - 30 l/min water in 1 l/min steps.

The flow quantities are given according to the design of the devices and cannot be changed by the customer.

By adding several individual elements nearly any flow value can be achieved (see data sheet BG-03).



BG-03

Flow Limiter for Large Quantities of Flow



Features

/ Regulation without

ext. power supply

/ Power-saving

/ For diameters DN20 to DN100

/ For screw fitting in existing pipes

/ All-metal version

/ Brass or stainless steel material

Description:

The BG-03 series of flow limiters has been developed for limiting the flow of water-like media to a particular value. They ensure that the flow value does not exceed even during fluctuating forward or reverse pressures. In contrast to most of the devices of this type normally available in the market, the BG-03 limiters have a stainless steel spring element instead of the commonly used plastic membrane. As a result of the differential pressure occurring over the limiter, the spring element gets pressed more or less against the sealing surface of the housing. The split opening between the sealing surface and the spring varies continually. As a result of the enlargement of the split opening when the pressure falls or, as the case may be, its decrease when the pressure rises, the quantity of fluid passing through the device is maintained at a constant rate. A version for flanged installation is optionally available. In doing so, the BG-03 will be intermediated flange clamped (flanges/adapter not included).

Application:

These devices are used for all water-like media. They can be deployed in water distribution systems in the industry, in sanitary and car-washing installations and in sterilization and water treatment installations.



Technical Specifications:

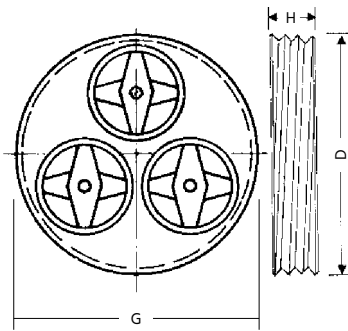
min. Regulating pressure / 2 bar

max. Differential pressure / 10 bar

max. Temperature / 200 °C

Accuracy /
up to 2l/min $\pm 15\%$
up to 3l/min $\pm 10\%$

Dim. Threaded version:

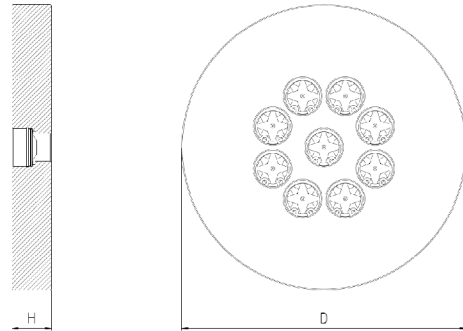


Version (G)	H	Q _{min} l/min	Q _{max} l/min	Weight (g)
¾"	12	1	30	25
1 ½"	12	3	90	104
2"	15	5	150	190
2 ½"	15	7	210	290
3"	15	9	270	375

Ordering Codes:

Order number	BG-03.	1.	3.	□□□
BG-03 Flow limiter				
Material / 1 = brass (not for flange) 2 = stainless steel				
Size / 1 = G ¾" 2 = G 1 ½" 3 = G 2" 4 = G 2 ½" 5 = G 3" Threaded version				
10 = DN40 11 = DN50 12 = DN65 13 = DN80 14 = DN100 Flange version				
Flowrate / □□□ = in l/min. water (1-420 l/min.)				

Dim. Flange version:



mm Nom. Diameter	Stars	Pressure rate adapter flange	Flowrate l/min.		H mm	D mm
ND40	2	PN 16 / 300 lbs	2	60	19.1	95
ND50	4	PN 16	4	120	18.0	110
ND50	4	300 lbs	4	120	23.9	113
ND65	7	PN 16 / 300 lbs	7	210	23.9	130
ND80	9	PN 16	9	270	20.0	145
ND80	9	300 lbs	9	270	23.9	150
ND100	14	PN 16	14	420	20.0	165
ND100	14	300 lbs	14	420	23.9	182

Flowrates flange:

Flowrate for H₂O at 20 °C in l/min

Type	Q _{min}	Q _{max}
DN40	2	60
DN50	4	120
DN65	7	210
DN80	9	270
DN100	14	420

Flow quantities:

Various individual elements can be supplied for the following flow quantities:

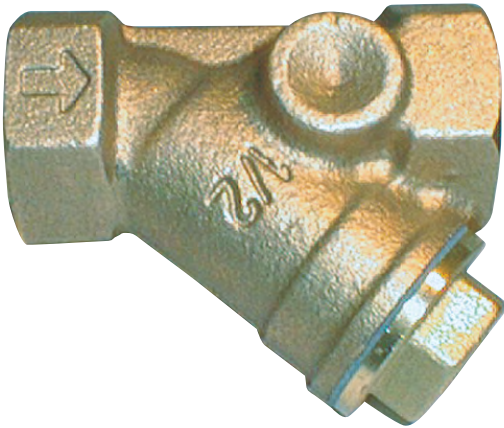
1 - 420 l/min water in 1 l/min steps.

By adding several elements on one limiter disc, nearly any flow quantities can be achieved.



FT-01

Strainer with and without Magnetic Separator



Features

/ For pipes of G 1/4" to G 2"

/ Filter mesh from 0.25 to 1 mm

/ Compact design

/ Gunmetal or st. steel

Description:

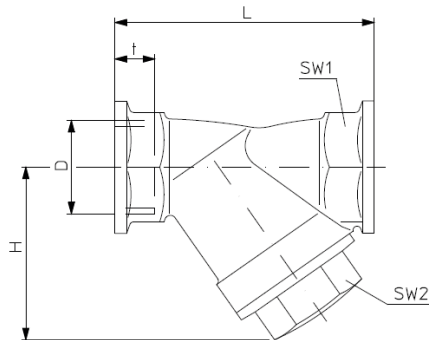
The FT-01 series of strainers is designed as slanted seat filter; they reliably prevent damages to the devices installed inside the pipe caused by impurities in the medium. Especially measuring devices with magnetic components can be protected by strainers with magnetic separators against malfunctioning due to ferrite particles.

Application:

The strainer has to be installed in the marked direction of flow and the filter should point downwards so particles can be deposited accordingly. The FT-01 can be used for fluids, gases (with the exception of fluids group 1 from guideline 2014/68/EU) and vapours up to 150°C, water, mineral, gear, heating and hydraulic oils etc. so as to protect pumps, gearboxes and flow measuring devices.



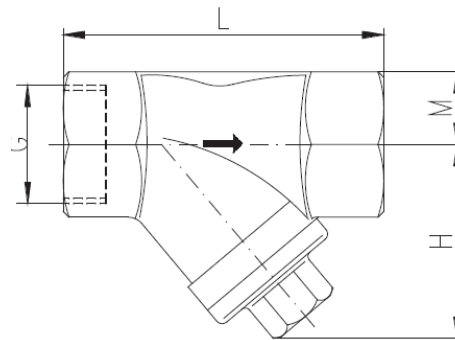
Dimensions Gunmetal:



Version: with magnetic separator, mesh 0,60 mm

D	L	t	H	SW1	SW2
¼"	56	11	34	21	17
3/8"	63,5	10,1	34	21	17
½"	66,5	13,2	42	27	22
¾"	76,5	14,5	52	32	27
1"	90	15	61	38	32
1 ¼"	112	18	73	47	41
1 ½"	120	18	82	54	46
2"	150	22	94	66	56

Dimensions Stainless Steel:



Version: without magnetic separator, mesh 0,50 mm

D	L	M	H
½"	65	12,5	42,5
¾"	75	15,5	49
1"	90	18,5	57,5
1 ¼"	110	23	65
1 ½"	120	26,5	74
2"	150	33,5	85

Version: without magnetic separator, mesh 0,25 mm

D	L	t	H	SW1	SW2
¼"	56	11	34	21	17
3/8"	63,5	10,1	34	22	17
½"	66,5	13,2	42	27	22
¾"	76,5	14,5	52	32	27
1"	90	15	61	38	32
1 ¼"	112	18	73	47	41
1 ½"	120	18	82	54	46
2"	150	22	94	66	56

Version: without magnetic separator, mesh 0,25 mm

D	L	M	H
½"	65	12,5	42,5
¾"	75	15,5	49
1"	90	18,5	57,5
1 ¼"	110	23	65
1 ½"	120	26,5	74
2"	150	33,5	85

Version: with magnetic separator, mesh 0,60 mm

D	L	t	H	SW1	SW2
½"	66,5	13,2	42	27	22
¾"	76,5	14,5	52	32	27
1"	90	15	61	38	32
1 ¼"	112	18	73	47	41
1 ½"	120	18	82	54	46
2"	150	22	94	66	56

Version: with magnetic separator, mesh 0,50 mm

D	L	M	H
½"	65	12,5	42,5
¾"	75	15,5	49
1"	90	18,5	57,5
1 ¼"	110	23	65
1 ½"	120	26,5	74
2"	150	33,5	85



Technical Specifications:

Temperature /
 -10. . . +150 °C gunmetal
 -30. . . +180 °C st. steel

Materials gunmetal /

Housing: gunmetal
 Sieve, strainer: stainless steel
 Magnetic system: hard ferrite

Materials st. steel /

Housing: SS 1.4408
 Sieve, strainer: SS 1.4301
 Seal: PTFE
 Magnetic system: hard ferrite

max. Pressure /

Gunmetal: 25 bar
 Stainless steel: 40 bar (16 bar with magn. separator)

Ordering Codes:

Order number	FT-01.	1.	3.	4.	2
FT-01 Strainer					
Version / 1 = without magnetic separator 2 = with magnetic separator (for SS only ½" to 1"; for GM ½" to 2")					
Material / 1 = gunmetal (for nominal diameters only ¼" to 2") 3 = stainless steel (for nominal diameters only ½" to 2")					
Connection / 0 = female thread G ¼" (FT-01.x.1 only) 1 = female thread G 3/8" (FT-01.x.1 only) 2 = female thread G ½" 3 = female thread G 3/4" 4 = female thread G 1" 5 = female thread G 1¼" 6 = female thread G 1½" 7 = female thread G 2"					
Filter mesh grade / 1 = 0.6 mm (only gunmetal) 2 = 0.25 mm 3 = 0.5 mm (only SS ½" to 2")					





NV-01

Needle valve



Features

/ Brass, steel or stainless steel

/ Usable up to 550°C

/ Up to PN 400

/ Compact Design

Description:

Profimess' needle valves are intended for precise regulation of the quantity of fluids flowing through pipes. The devices body is constructed in two parts. The upper part is screwed into the body. Designs available in brass, steel and stainless steel in nominal diameters of IG 1/8" to IG 2" allow a wide range of applications which is why these devices are used in the entire industry.

Application:

Profimess' needle valves are deployed wherever flowing fluids in industrial installations need to be shut off, reduced or regulated. The stainless steel version of the valves can be deployed up to 400 bar and 350°C, whereby the dependence of maximum pressure and the operating temperature must be taken into consideration. Higher temperatures, up to 550°C are available on request. They are particularly suitable to be used as shut-off devices in measuring operations in level and flow control.



Technical Specifications:

max. Pressure /	100 to 400 bar, see table				
Pressure reduction /					
Temperature:	50°C	100°C	200°C	300°C	400°C
Reduction:	6%	15%	37%	60%	84%
max. Media-temp. /	NV-01.1: -20°C to +100°C NV-01.2: -20°C to +350°C NV-01.3: -20°C to +250°C up to 550°C on request				

Material NV-01.1 /

Housing:	brass
Headpiece:	brass
Spindle:	brass
Gland base ring:	brass
Spindle sealing:	PTFE
Gland nut:	brass

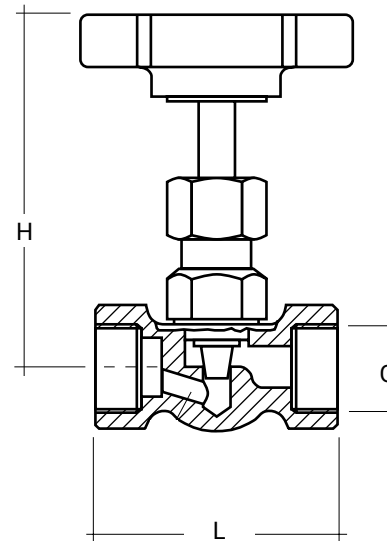
Material NV-01.2 /

Housing:	steel
Headpiece:	steel
Spindle:	1.4104
Gland base ring:	1.4104
Spindle sealing:	graphite
Gland nut:	steel

Material NV-01.3 /

Housing:	1.4571
Headpiece:	1.4571
Spindle:	1.4571
Gland base ring:	1.4571
Spindle sealing:	PTFE
Gland nut:	1.4571

Dimensions in mm:



NV-01.1

G	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
L	50	50	50	50	67	75	110	110	112
H	78	78	78	78	90	90	110	110	120
Kv in m³/h	0,24	0,48	0,6	0,66	1,08	1,62	3,0	3,6	3,6
PN	100	100	100	100	100	100	100	100	100

NV-01.2 and NV-01.3

G	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
L	45	55	55	60	75	100	110	130	130
H	72	75	72	77	99	110	145	145	145
Kv in m³/h	0,24	0,48	0,6	0,74	1,35	1,66	3,10	5,56	5,56
PN	400	400	400	400	200	200	160	120	120

Ordering Codes:

Order number	NV-01.	1.	3
NV-01 Needle Valve			
Material /			
1 = brass			
2 = steel			
3 = stainless steel			
Process Connection /			
1 = IG 1/8"			
2 = IG 1/4"			
3 = IG 3/8"			
4 = IG 1/2"			
5 = IG 3/4"			
6 = IG 1"			
7 = IG 1 1/4"			
8 = IG 1 1/2"			
9 = IG 2"			



PV-01

High-Precision Control Valve for Gases and Liquids

Description:

The PV-01 high-precision control valves are intended for precise fine-flow adjustment of gases or liquids flowing through pipes. The control valves consists of an inner valve and a body with straight or angled process connection. The PV-01 has a 15-turn spindle to fully open from a closed condition. The spindle operates practically without any hysteresis and closes leak-proof clockwise or optionally counterclockwise. The valve needle is non-rotating and thus provides a stable adjustment. Various Cv-values ensure optimal control ranges.

Features

/ High accurate flow-adjustment

/ Straight or angle designs

/ Cw- or ccw-closing

/ 15-turn spindl

/ Minimal hysteresis

/ Leak-proof when closed

/ Different Cv-values

/ Aluminium, brass or SS versions

Application:

High-precision control valves are deployed wherever flowing gases or liquids in industrial installations require a very fine and accurate adjustment. They are especially suitable for measuring operations in the areas of chemical process engineering, analytical technology, biotechnology, chemical nuclear technology, medical engineering and environmental technology.



Technical Specifications:

Design type /	straight valve, angled valve or valve cartridge for selfmounting (without body)
Rotating direction /	valve cw-closed (standard) or valve ccw-closed
Valve turns /	15-turn spindle, practically without hysteresis
Housing material /	aluminium anodized / brass nickel-plated or stainless steel 1.4305
Seal /	FKM, EPDM or FFKM
Process connection /	G 1/8"-IG, G 1/4"-IG, G 1/2"-IG, NPT 1/4"-IG or G 1/4"-IG female thread for compression fittings
Media /	5 µm filtered compressed air, non-corrosive gases or liquids
max. Operating pressure /	40 bar
min. Operating temp. /	-40 °C
max. Operating temp. /	+100 °C
Leak rate /	< 1 x 10 ⁻⁵ mbar l/s He
Options /	- standard knob with locking ring - locking nut (instead of standard knob) - digi-knob, 100 divisions and with display, only right-hand closing

Possible Configurations:

Version	Design size - small	Design size - large
Material (body, seals)	aluminium / brass, FKM; st. steel 1.4305, FKM; st. steel 1.4305, EPDM; st. steel 1.4305, FFKM	aluminium / brass, FKM;
Straight valve	x	x
Angled valve	x	
Valve insert without body	x	x
Cw-closed	x	x
Ccw-closed	x	
Process connection	Standard: G 1/4" Options: G 1/8", NPT 1/4" or G 1/4" for compression fittings	Standard: G 1/2" Options: -
Valve size (needle size)	NG 1.0; NG 1.5; NG 2.0; NG 2.5; NG 3.0	NG 4.0; NG 6.5

Materials:

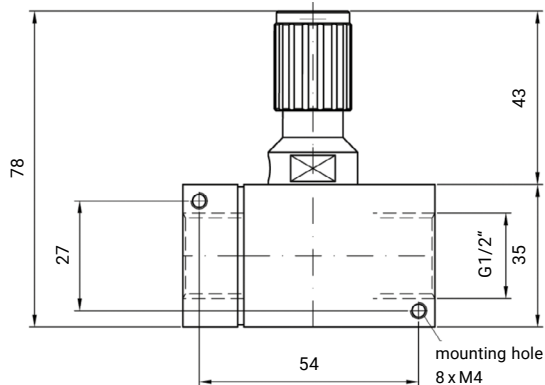
Component (wetted)	Aluminium / brass	Stainless Steel
Valve	aluminium anodized	St. Steel 1.4305
Valve insert / cartridge	brass nickel-plated	St. Steel 1.4305
Connections	brass nickel-plated	St. Steel 1.4305
Seals	FKM	FKM, EPDM or FFKM

Ordering Codes:

Order number	PV-01.	1.	2.	2.	1.	3.	6.	0
PV-01 High Precision Control Valve for Gases & Liquids								
Design size / 1 = small 2 = large								
Material (housing, seals) / 1 = aluminium anodized/brass nickel-plated, FKM 2 = stainless steel 1.4305, FKM 3 = stainless steel 1.4305, EPDM 4 = stainless steel 1.4305, FFKM								
Design type / 1 = straight valve 2 = angled valve 3 = valve insert without body								
Valve type / 1 = valve cw-closed (standard) 2 = valve ccw-closed								
Process connection / 1 = G 1/8" - female thread 2 = G 1/4" - female thread 3 = G 1/4" - female thread, compression fitting 4 = G 1/2" - female thread 5 = NPT 1/4" - female thread								
Valve size (needle size) / 1 = NG 1.0 2 = NG 1.5 3 = NG 2.0 4 = NG 2.5 5 = NG 3.0 6 = NG 4.0 7 = NG 6.5								
Optionen / 0 = without 1 = standard knob with locking ring 2 = locking nut (instead of standard knob) 3 = digi knob, 100 divisions (for cw-closed valve only) 9 = customer specific version (please specify in detailed text)								

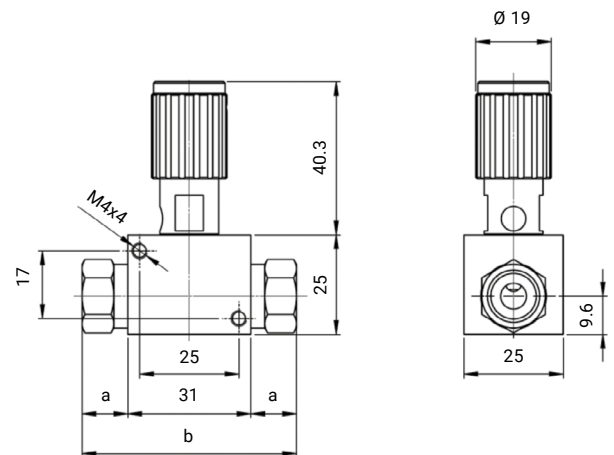


Dimensions in mm:



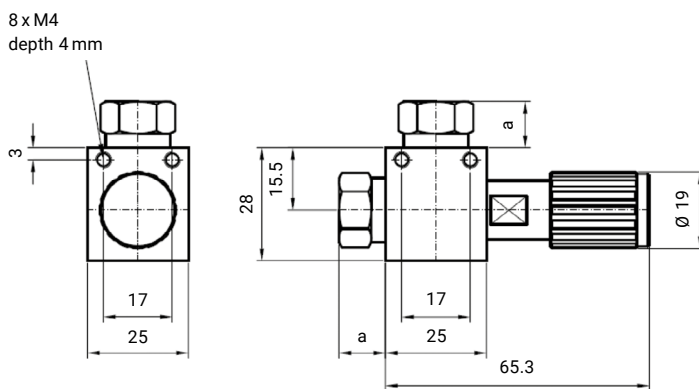
Straight valve - large size

Process connection	length	width
G 1/2" - female thread	62 mm	35 mm



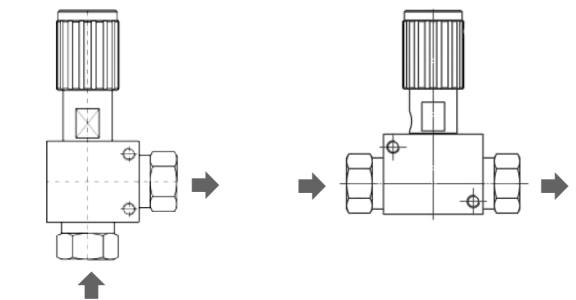
Straight valve - small size

Process connection	a	b	Thread depth
G 1/4" - female thread	12 mm	55 mm	7 mm
G 1/8" - female thread	12 mm	55 mm	8 mm
NPT 1/4" - female thread	16 mm	63 mm	9 mm
G 1/4" - female thread for compression fitting	17 mm	65 mm	12 mm



Angled valve - small size

Process connection	a	Thread depth
G 1/4" - female thread	12 mm	7 mm
G 1/8" - female thread	12 mm	8 mm
NPT 1/4" - female thread	16 mm	9 mm
G 1/4" - female thread for compression fitting	17 mm	12 mm



Angled valve

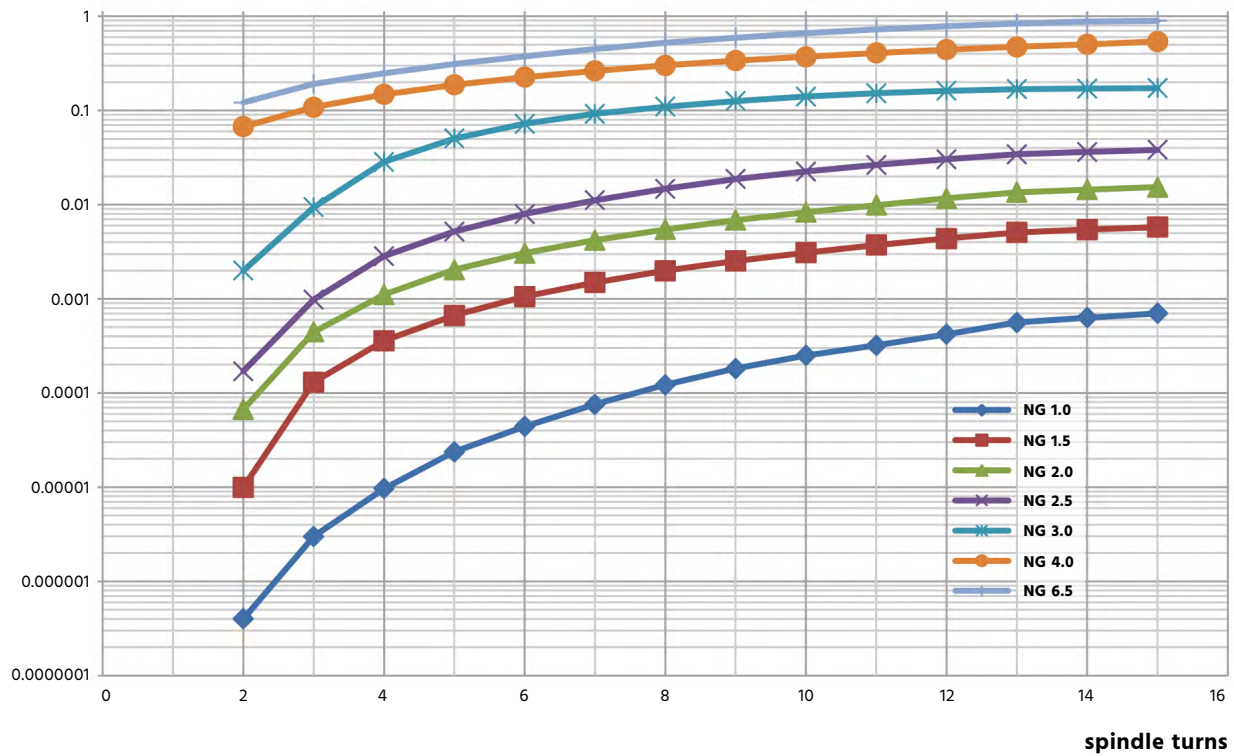
Straight valve



C_v-Values High-Precision Control Valve:

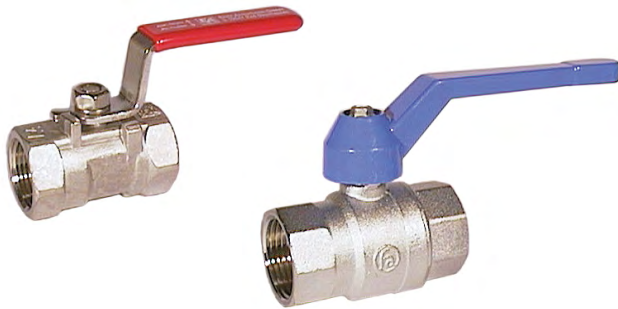
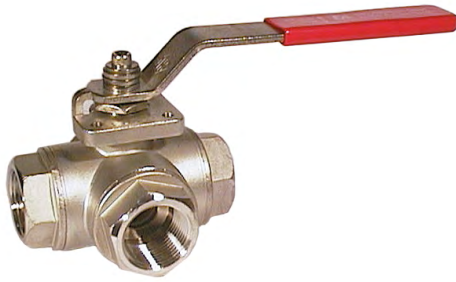
C_v-values for valves NG 1.0 to NG 6.5 (C_v-value 1 = 1 m³/h water at Δ p of 1 bar)

C_v-Value



Process connection	1.0	1.5	2.0	2.5	3.0	4.0	6.5
C _v -Value (m ³ /h)	0.0007	0.005	0.015	0.038	0.17	0.54	1.00

C_v-Value: For these flow values of water at 20 °C exactly 1 bar pressure will drop at the relevant valve.
These are taken into regard so as to assess the loss of pressure on the valve with reference to the entire range.



KG-01

Ball Valve in Brass or Stainless Steel

Features

/ High temperature resistance

/ Up to PN64

/ 2 or 3-way versions

/ FKM and PTFE sealings

Description:

The KG-01 series of ball valves are suited for shutting-off the flow of various media. Due to the materials used, such as PTFE, FKM, brass or stainless steel, they are resistant to chemically hostile, gaseous, fluid, viscous, powdery and polluted substances. Permissible ranges of pressure and temperature allow them to be deployed in difficult processes, for example, in chemical and petrochemical industries, in metal and container construction or in the air-conditioning, ventilation and thermal technologies.

Application:

Ball valves have various uses in almost every industrial and private sector. The materials can be easily fitted to the customers needs and their toughness make the Type KG-01 ball valves to reliable devices for House- & Sanitary-technology, plants, oils, petrols, compressed air, chemical processes or heating technology.



Technical Specifications:

Brass version /

max. Testing pressure / up to 80°C

2-way ball valve: ¼" up to 2" PN40
2½" up to 3"
4" PN20
up to 50°C PN40

3-way ball valve: ¼" up to ¾" PN30
1" up to 1¼" PN20
1½" up to 2" PN16

max. Temperature / -20°C...+120°C

Housing / brass chrome-plated

Ball /

2-way ball valve: brass hard chrome-plated
3-way ball valve: brass chrome-plated

Ball sealing /

2-way ball valve: PTFE
3-way ball valve: PTFE / FKM

Spindle sealing /

2-way ball valve: FKM
3-way ball valve: PTFE / FKM

Stainless steel version /

max. Testing pressure / up to 80°C

2-way ball valve: PN40 (PN64 on request)
3-way ball valve: PN63

max. Temperature / -30°C...+180°C

Housing / st. steel 1.4408

Ball / st. steel 1.4401

Ball sealing /

2-way ball valve: PTFE
3-way ball valve: PTFE reinforced w. 15% glassfibre

Spindle sealing /

2-way ball valve: PTFE
3-way ball valve: PTFE / FKM

Options: flange connection, emptying boring, tetrahedral cap, spindle extension, low-cost versions with reduced passage, pneumatic and electrical drives

Lever Positions:

Handhebel- bzw. Antriebs- montage / Handle or actuator- mou	T-Bohrung/ T-configuration				L-Bohrung/ L-configuration		
Stellung 0°/ 0°-position							
Stellung 90°/ 90°-position							

Ordering Codes:

Order number

KG-01. 1. 2. 1

KG-01 Ball Valve

Type /

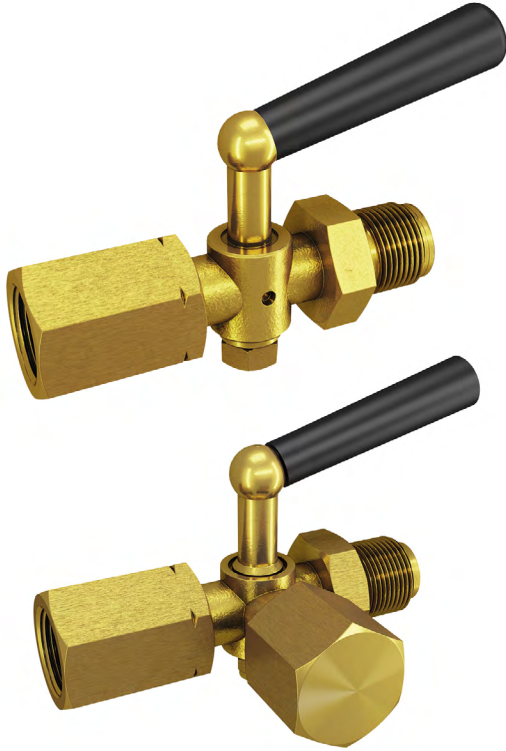
1 = 2-way, thread female/ femalen
2 = 2-way, thread female/ male
3 = 3-way L boring
4 = 3-way T boring

Material /

1 = brass
2 = stainless steel

Process connection /

1 = G ¼" (not 3-way stainless steel)
2 = G 3/8" (not 3-way stainless steel)
3 = G ½"
4 = G ¾"
5 = G 1"
6 = G 1¼"
7 = G 1½"
8 = G 2"



AH-65

Manometer Gauge Stopcock According to DIN 16262 A/B & 16263

Features

/ Monitor and vent the pipe

/ Brass or stainless steel

/ -10°C to 50°C

/ Up to 25 bar

Description:

A stopcock is used for the inlet, flow or outlet in pipes to control liquids and gases. Depending on the switch position, measuring devices can receive pressure (operating mode), or be relieved from it (de-pressuring mode). In the blow-out position, fluids and gases can pass through the stopcock.

Application:

Stopcocks are available with or without an additional test connector (DIN 16263). This connector can be used for another measuring device, to test an installed pressure gauge. The stopcock can be installed via G $\frac{1}{4}$ " or G $\frac{1}{2}$ " threads.



Technical Specifications:

Process connection / G ½" or G ¼"

max. Pressure /

G ½" Brass: 25 bar

G ½" SS: 16 bar

G ¼" Brass: 6 bar

G ¼" SS: 6 bar

max. Media temperature / -10°C to 50°C

Materials /

Body: Brass, SS 1.4571

Handle: PP

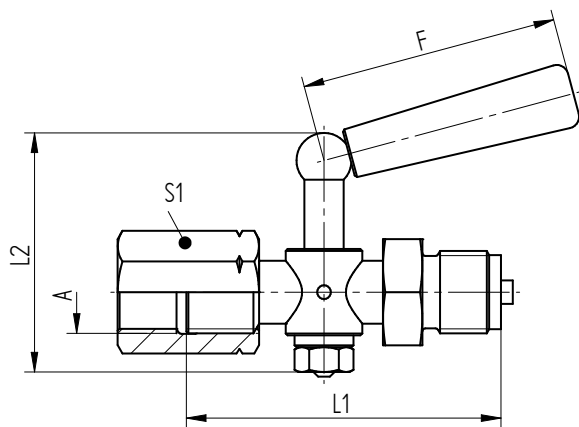
When connecting to a Manometer, please use flat gaskets DIN 1625!

Ordering Codes:

Order number	AH-65.	1.	2.	0
AH-65 Manometer Gauge Stopcock				
Connection /				
1 = G ½"				
2 = G ¼"				
Material /				
1 = brass				
2 = stainless steel 1.4571				
Test Connector for G½" /				
0 = without (DIN 16262 A/B)				
9 = with Test Connector M20 x 1.5 (DIN 16263)				

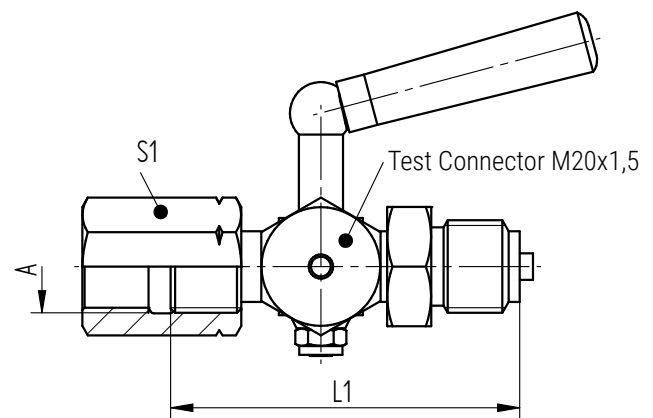
Please consider the pressure as indicated on the left.

Dimensions in mm:



Version	L1 / mm	L2 / mm	F / mm	S1
Brass G¼"	55	39	28	17
Brass G½"	79,5	60	62	27
SS 1.4571 G¼"	57	63	48	17
SS 1.4571 G½"	80	67	60	27

Dimensions (test connector):



Version	L1 / mm	S1
Brass	80	27
SS 1.4571	80	27



AV-67

Manometer Gauge shut-off Valve according to DIN 16270 A & 16271 A



Features

/ Up to 400 bar and 200°C

/ Closing, opening and throttling

/ Additional test connector

Description:

This shut-off valve can also throttle the pressure in a pipe, instead of just opening and closing it. The AV-67 is, in its stainless steel version, very tough, and can resist pressures up to 400 bar and 200°C. An optional test connector can be used to replace measuring instruments or test the measurement result with another device, without removing it from the process or interrupting the actual operation.

Application:

Shut-off valves can be installed in front of devices operating only within a certain pressure range or a certain amount of media. This way, measuring devices can be started slowly and protected from pressure surges.



Technical Specifications:

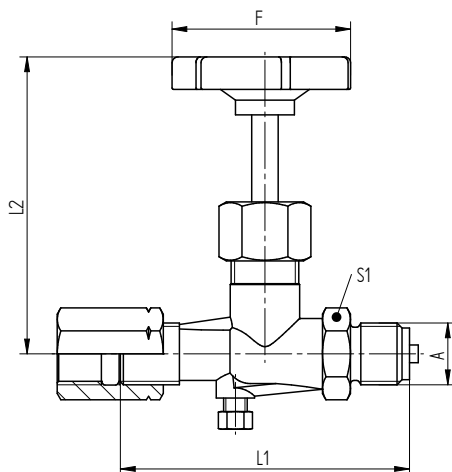
Process connection /	G ½"
max. Pressure /	400 bar; 250 bar (Brass)
max. Media temperature /	-10°C to 200°C; resp. -10°C to 120°C (Brass)
Materials /	
Seal:	Steel = Graphite Brass and SS = PTFE
Body:	Brass, Steel 1.0460, SS 1.4571
Handwheel:	Bakelit

When connecting to a Manometer, please use flat gaskets DIN 1625!

Ordering Codes:

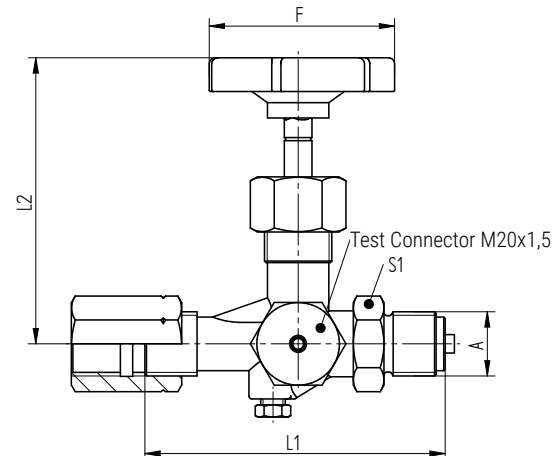
Order number	AV-67. B. 0
AV-67 Manometer Gauge shut-off Valve	
Version /	
A = 250 bar - 120 °C - Brass	
B = 400 bar - 120 °C - Steel 1.0460	
C = 400 bar - 200 °C - SS 1.4571	
Test Connector /	
0 = without (DIN 16270 A)	
9 = with test connector M20 x 1,5 (DIN 16271 A)	

Dimensions in mm:



Version	L1 / mm	L12 / mm	F / mm	S1
Brass	100	100	63	27
Steel 1.0460	100	94	63	27
SS 1.4571	100	94	63	27

Dimensions (test connector):

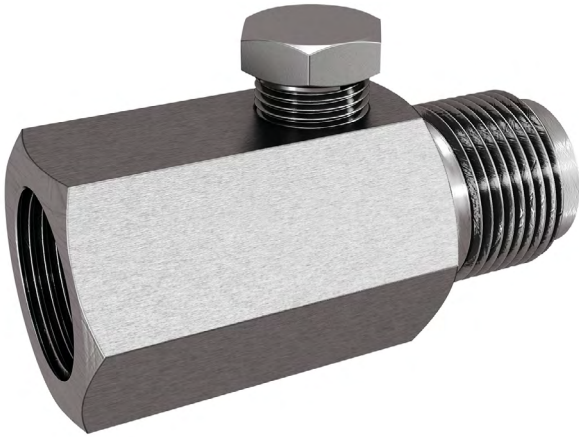


Variante	L1 / mm	L12 / mm	F / mm	S1
Brass	100	100	63	27
Steel 1.0460	100	94	63	27
SS 1.4571	100	94	63	27



RS-68

Shock Preventer



Features

/ Variable configuration

/ Easy to handle

/ Different materials

/ PN 250 and PN 400

Description:

The RS-68 is a shock preventer to limit pressure surges and pulsations from damaging pressure gauges and transmitters. It can also be integrated into any process easily, to protect a variety of other devices too. The throttling effect is generated through changing the flows inlet size with an adjusting screw.

Application:

Whether in general mechanical engineering, hydraulics, compressors, pumps or plant engineering, the RS-68 is used everywhere, where pressure peaks may occur. The adjusting screw should be screwed in completely, before installing the reducer, because it has to be adjusted to the local measuring conditions. After starting the plant or process, the screw should be screwed outwards just as much as pressure surges can not be seen on the pressure gauges scale anymore. Only fluids without impurities should be used for the reducer to work. Otherwise a clogging of the flow opening can endanger the pressure impulse reducer.



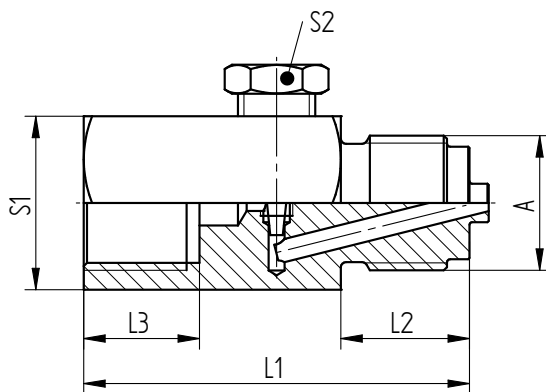
Technical Specifications:

Process connection /	G ½" or G ¼"
max. Pressure /	250 bar for brass 400 bar for steel & st. steel
max. Temperature /	
Brass:	-10°C up to 120°C
Steel:	-10°C up to 200°C
Stainless Steel:	-10°C up to 200°C
Material /	
Body:	brass, steel, SS 1.4571

Ordering Codes:

Order number:	RS-68.	1.	2
RS-68 Shock Preventer			
Process connection /			
1 = G ½"			
2 = G ¼"			
Material /			
1 = brass			
2 = steel			
3 = stainless steel 1.4571			

Dimensions in mm:



Version	L1 / mm	L2 / mm	L3 / mm	S1	S2
Brass G ¼"	46	14	11	19	12
Brass G ½"	60	20	18	27	14
Steel G ¼"	47	13	11	19	14
Steel G ½"	60	20	18	27	14
SS 1.4571 G ¼"	47	13	11	19	12
SS 1.4571 G ½"	60	20	18	27	14



GH-01

IP66 Connection Box 55 x 55 x 37 mm



Features

- / Protection class IP66
- / Two or three cable glands
- / Self-extinguishing
- / Fully insulated
- / Halogen-free
- / Applicable from -20°C to +90°C
- / Impact resistance 7 Joule

Description:

The connection box GH-01 adds a rough outdoor enclosure to the range of accessories supplied by Profimess. Protection class of this compact housing is IP66, therefore it may even be mounted under harsh weather conditions or in facilities, where water jet cleaning takes place. Two or three pre-assembled M16x1,5 IP68 cable glands for cable diameters from 5 mm up to 10 mm offer enough space for most applications. Optionally two more cable glands (max. four) may be mounted to the free sides of the box.

Application:

GH-01 is used, where ever the interface between a simple switch or sensor in an outdoor area and the supply or signal circuits has to be protected against environmental influences. The range of application is wide. GH-01 offers a quick, price-worth solution.

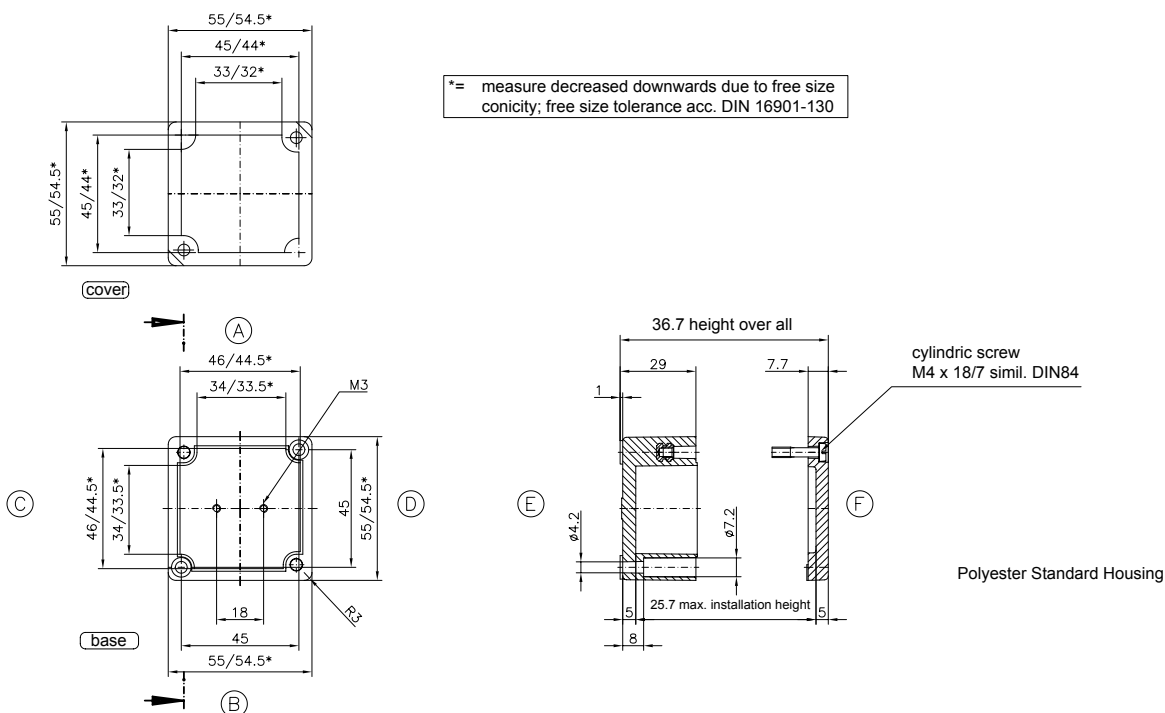
Technical Specifications:

Protection class /	IP66 acc. to EN60529
Material /	glass fibre reinforced, duroplastic polyester
Seal /	flat seal from chloroprene
Colour /	RAL7000, squirrel grey
max. Temperature without cable glands /	-40°C. . . +100°C
Impact resistance /	7 Joule acc. to EN60079-0
Surface resistance /	>10 ¹² Ohm, IEC60093
Flammability /	self-extinguishing; UL94 V-0
Insulation /	fully insulated VDE 0100
Disruptive strength /	18 kV/mm, IEC60243-1
Toxicity /	halogen-free
Cable glands /	2 (3) pieces M16 x 1.5 acc. to DIN 5026, pre-assembled
Material:	polyamid 6 V2
Colour:	light grey, RAL 7035
Protection class:	IP68 5 bar
Temperature range:	-20°C. . . +100°C
Cable diameter:	5. . . 10 mm
Thread length:	8 mm

Ordering Codes:

Order number	GH-01.	1
IP66 Connection Box		
Electrical connection /		
2 = two cable glands		
3 = three cable glands		

Dimensions in mm:





UM-01

Universal Transmitter for RTD, TC, Ohm, Potentiometer, mA and V



Description:

The UM-01 universal transmitter is a module for assembling into a switchgear cabinet that can receive at the input measured values from resistance thermometers, thermo-elements, ohmic resistors, potentiometers or devices with analogue signals and translates them into a galvanically separated analogue signal. Optionally, the UM-01 can also be equipped with two additional programmable relay outputs; alternatively it can be supplied only as a cost-effective switching unit with relay outputs. The UM-01 is programmed through a separately available mountable display PE451 which is fixed on the front side of the measurement converter to display continuously the input signal, the units, the device TAG-No. and the relay or the output status, as required. The special feature of PE451 is, however, that the UM-01 operates even without it and that the program parameters in the PE451 remain saved. Programming more than one UM-01 is, therefore, a child's play. Once the configuration is done, the settings are easily read into any new measurement converter on mounting and pressing the button; cumbersome resetting of parameters is, therefore, unnecessary. The UM-01 measurement converter is powered universally by DC or AC voltages and is compatible with most common transmitter devices like thermo-elements of type B to type LR, resistance thermometers NI100 and PT100 as 2, 3 or 4-wire and transmitters with analogue output range of 0-20 mA or 0-10 V DC. The UM-01 has been developed in accordance with the most stringent safety measures and hence can be used in installations with SIL 2.

Application:

Wherever temperatures are measured using thermo-elements or resistance thermometers or levels are output by levelmeters as a potentiometer signal, the UM-01 is the ideal supplement in the line of measuring devices. It converts the linear input signal into an analogue output signal and offers, additionally, the facility of tapping two setpoints as a potential-free relay NO contact. Since the transmitter connected at the input of UM-01 is powered directly by the UM-01, the measurement converter is perfectly suited as a signal separator that establishes a galvanic

Features

/ Ideal for evaluation of resistance
thermometers or levelmeters

/ Galv. separation of analogue signals

/ Models with relay and analogue output

/ Optionally with DNV approval

/ Universal power supply through

21.6 - 253 V AC or 19.2 - 300 V DC

/ Including sensor power supply

/ Attachable display

/ SIL 2



separation between the measuring and analyzing circuits. The UM-01 has been conceived for universal application so as to enable the user to save costs on inventory, since he would only need a single device as against two to three variants earlier. Optionally, the UM-01 can be supplied with UL approval for markets in USA or with DNV approval for shipping applications.

Electrical Specifications:

Ambient temperature /	-20°C...+60°C
General specifications /	
Universal power supply:	21,6...253 VAC, 50...60 Hz or 19,2...300 VDC
Power consumption:	≤ 2,0 W (≤ 2,5 W, UM-01.3)
Fuse:	400 mA T / 250 VAC
Insulation voltage, Test/Operation:	2,3 kVAC / 250 VAC
Communication interface:	Programming front PE451
Signal/Noise ratio:	min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%):	
· Temperature input:	≤ 1 s
· mA-/V input:	≤ 400ms
Calibration temp.:	20...28°C

Compliance with directives /

EMV:	2014/30/E4
LVD:	2014/35/E4
FM:	3025 177
UL, Standard f. Safety	UL 508

2-wire power supply (terminals 44, 43) /

25...16 VDC / 0...20 mA

Cable diameter /

1 x 2.5 mm² max. flex

Terminal joint torque /

0.5 Nm

Rel. humidity /

<95% RF (non-condensing)

Dimensions with PE451 /

109 x 23.5 x 116 mm
(H x W x D)

Dimensions without PE451 /

109 x 23.5 x 104 mm
(H x W x D)

Protection class

Housing/Terminal /

IP50 / IP20

Weight /

Basic weight 145 g plus
25 g in relay outputs plus
15 g with PE451

Accuracy Basic Values:

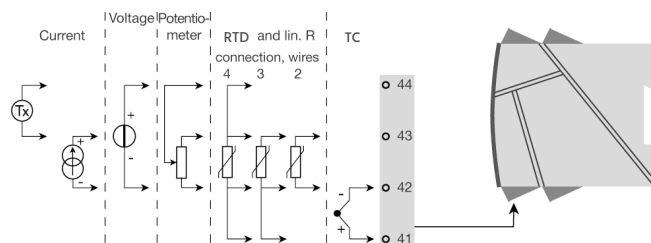
Input type	Basic accuracy	Temp. coefficient
mA	≤ ± 4 µA	≤ ± 4 µA / °C
Volt	≤ ± 20 µV	≤ ± 2 µV / °C
RTH	≤ ± 0.2°C	≤ ± 0.01°C / °C
Lin. R	≤ ± 0.1 Ω	≤ ± 0.01 Ω / °C
Potentiometer	≤ ± 0.1 Ω	≤ ± 0.01 Ω / °C
TE-Types E, J, K, L, N, T, U	≤ ± 1°C	≤ ± 0.05°C / °C
TE-Types R, S, W3, W5, LR	≤ ± 2°C	≤ ± 0.2°C / °C
TE-Type: B 85°C...200°C	≤ ± 4°C	≤ ± 0.4°C / °C
TE-Type: B 200°C...1820°C	≤ ± 2°C	≤ ± 0.2°C / °C

Accuracy in general /

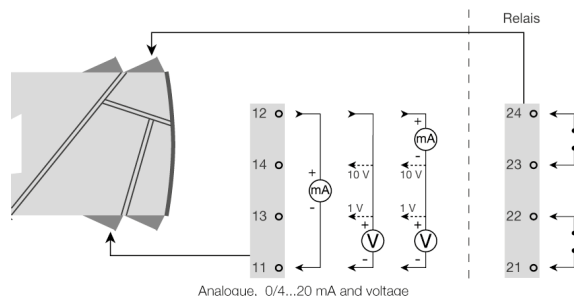
Absolute accuracy:	≤ ± 0.1% of operating range
Temperature coefficient:	≤ ± 0.01% of operating range per °C
EMV error voltage factor:	≤ ± 0.5% of measuring range
Extended EMV error stability:	NAMUR NE21, criterion A
Burst:	≤ ± 1% of measuring range

Applications

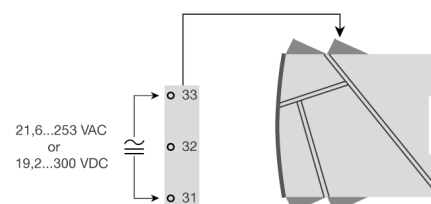
Input signals:



Output signals:



Power supply:





Inputs:

RTD-, linear resistance and potentiometer /

Eingangstyp	MIN-Wert	MAX-Wert	Norm
Pt100	-200°C	+850°C	IEC60751
Ni100	-60°C	+250°C	DIN 43760
Lin. R	0 Ω	10000 Ω	-
Potentiometer	10 Ω	100 kΩ	-

Cable resistance per wire for RTD: 50 Ω max.
 Sensor current for RTD: nom. 0.2 mA
 Effect of wire resistance (3- or 4-wire RTD): < 0.002 Ohm / Ohm
 Sensor recognition RTD: yes
 Short-circuit detection RTD: < 15 Ω

Thermo-element input /

Type	MIN-Value	MAX-Value	Standard
B	0°C	+1820°C	IEC 60584-1
E	-100°C	+1000°C	IEC 60584-1
J	-100°C	+1200°C	IEC 60584-1
K	-180°C	+1372°C	IEC 60584-1
L	-200°C	+900°C	DIN 43710
N	-180°C	+1300°C	IEC 60584-1
R	-50°C	+1760°C	IEC 60584-1
S	-50°C	+1760°C	IEC 60584-1
T	-200°C	+400°C	IEC 60584-1
U	-200°C	+600°C	DIN 43710
W3	0°C	+2300°C	ASTM E988-90
W5	0°C	+2300°C	ASTM E988-90
LR	-200°C	+800°C	GOST 3044-84

Compensations accuracy (CJC) through internal sensors: $\pm (2,0^{\circ}\text{C} + 0,4^{\circ}\text{C} * \Delta t)$
 Sensor detection all TC types: yes
 Sensor error current on detection: nom. 2 µA, otherwise 0 µA

Power input /

Operating range: 0...20 mA
 Programmable op. ranges: 0...20 and 4...20 mA
 Input resistance: nom. 20 Ω + PTC 50 Ω

Voltage input /

Operating range: 0 V...12 VDC
 Programmable op. ranges: 0/0,2...1; 0/1...5; 0/2...10 VDC
 Input resistance: nom. 10 MΩ

Outputs:

Current output

(UM-01.2 and UM-01.3 only) /

Signal range: 0...20 mA
 Programmable operating ranges: 0/4...20 or 20...4/0 mA
 Load: 800 Ω
 Load stability: $\leq 0.01\%$ of measuring range / 100 Ω
 Sensor error detection: 0 / 3.5 / 23 mA / keine
 NAMUR NE43 Up-/Downscale: 23 mA / 3.5 mA
 Power limiting: ≤ 28 mA

Voltage output

(UM-01.2 and UM-01.3 only) /

Signal range: 0...10 VDC
 Programmable operating ranges: 0/0,2...1; 0/1...5; 0/2...10; 1...0,2/0; 5...1/0; 10...2/0 VDC
 Load: ≥ 500 kΩ

Relay outputs

(UM-01.1 and UM-01.3 only) /

Relay function: Setpoint value, Window, Sensor error, Power and Off
 Hysteresis: 0...100%
 On-/Off delay: 0...3600 s
 Maximum voltage: 250 VRMS
 Maximum current: 2 A / AC or 1 A / DC
 Maximum AC power: 500 VA
 Sensor error confirmation: Close / Open / Hold

Ordering Codes:

Order number

UM-01.
2. 1

UM-01 Universal Transmitter

Output variants /

- 1 = Limit switch with two potential-free relays
- 2 = Transmitter with 4-20 mA- or 0-10 V DC output
- 3 = Transmitter with 4-20 mA- or 0-10 V DC output and two potential-free relays

Programming unit PE451 /

- 0 = none
- 1 = with programming unit PE451 for front-side mounting on the UM-01





UM-05

Universal transmitter for top hat rail mounting

Features

- / 9 adjustable supporting points
- / Tara-function
- / Programming interlock via access code
- / Plug-in screw terminals
- / Min/max value recording
- / PNP/NPN- or relay inputs
- / Current or voltage input
- / 3-digit digital display
- / Three front-taster

Description:

The Universal Transmitter UM-05 is a new development of our company and offers the possibility to convert all current sensor signals from the ranges flow, level, pressure and temperature to switching or analog signals, and to set new standards in price-performance ratio. On the input side, the device processes voltage and current signals, Pt100 and PT1000, thermocouples, frequencies and pulses. At the output, the user can use switching signals in the form of relay or PhotoMos outputs, or use the optionally installed analogue signals, the RS232 / 485 or the Bluetooth interface. The UM-05 has a standard 3-digit digital display and has become a DIN rail assembly designed.

Application:

In the development of the UM-05, the main focus was on ease of use, the suitability for the largest possible number of signals and a very low price range. The configuration therefore also takes place either via three front pushbuttons or via the optional PC software PM-TOOL with CD or USB adapter. The UM-05 is powered by DC or AC voltage and provides as standard a red, 3-digit display, nine parameterizable interpolation points and a display flashing when the limit value is exceeded or undershot. An optionally available sensor supply saves the user the additional power supply for the sensor and an optional data logger saves the recorded measured values over time.



Technical Specifications:

Protection class /	IP20 / pluggable terminal
Dimensions /	W22,5 x H117,2 x D107 mm
Fixing /	top hat rail
Housing material/	PA6, black, UL94V-0
Connection /	plug-in terminal; wire cross section up to 1,5 mm ²
Display /	3-digits
Digit height /	7 mm
Segment colour /	red
Range of display /	-199 up to 999
Switching points /	LED S1, LED S2, LED S3, LED S4
Overflow/	horizontal bars at the top
Underflow/	horizontal bars at the bottom
Display time/Meas. time /	0,1 to 10,0 seconds
Temperature drift /	100 ppm/K
Measuring time/	0,01...2,0 seconds
Measuring rate /	approx. 1/s at temperature sensor, approx. 100/s with standard signals
Measuring principle /	U/F conversion
Resolution /	approx. 14 Bit at 1s measuring time
Working temperature /	-20 to +50°C
Storing temperature /	-30 to +70°C
Weathering resistance /	relative humidity 0-85% on years average without dew

Elektrical Specifications:

Supply 1 /	24 VDC \pm 10% galvanic isolated, \leq 5 VA
Supply 2 /	100-240 VAC 50/60 Hz DC \pm 10%, \leq 15 VA
Supply 3 /	15-40 VDC galvanic isolated / 20-30 VAC 50/60 Hz, \leq 10 VA
Sensor supply /	24 VDC / 50 mA incl. digital input
Switching points /	2 Relay outputs with nomally open contact Switching voltage / 30 VDC/AC, max. 2 A resistive load Operating life / $< 30\text{mV} / < 10\text{mA}$ - min. $2,5 \times 10^6$ 30 VDC / 1 A - minimum 5×10^5 30 VDC / 2 A - minimum 1×10^5
	2 PhotoMos-outputs with no. open contact Switching voltage / 30 VDC/AC, max. 0,4 A
Analog output /	0-10 VDC / load min. 10 kOhm 0/4-20 mA / load max. 500 Ohm. 12 Bit
Interface /	Modbus with ASCII or RTU-protocol USB Bluetooth RS 323 RS485
Memory /	EEPROM Data preservation \geq 100 years at 25°C
EMV /	EN61326
CE-identification /	Conformität according to directive 2014/30/EU
Safety regulations /	according to low voltage directive 2014/35/EU EN 61010; EN 60664-1
Pulse input /	TTL / Low $< 2\text{ V}$ / High $> 3\text{ V}$ HTL/PNP / Low $< 6\text{ V}$ / High $> 8\text{ V}$ Namur / Low $< 1,5\text{ mA}$ / High $> 2,5\text{ mA}$ NPN / Low $< 0,8\text{ V}$ / High via resistance
Reset input	activ $< 0,8\text{ V}$
Measuring error/	
Standard	0,2% of measurement ± 1 Digit
Pt 100 / Pt 1000	0,5% of measurement ± 1 Digit
Thermocouple	0,3% of measurement ± 1 Digit



Measuring Inputs:

Measuring Input	Measuring range	Measuring span	Resolution
Voltage	0...10 V (Ri > 100 kOhm)	0...12 V	≥ 14 bit
Voltage	0...2 V (Ri ≥ 10 kOhm)	0...2,2 V	≥ 14 bit
Voltage	0...1 V (Ri ≥ 10 kOhm)	0...1,1 V	≥ 14 bit
Voltage	0...50 mV (Ri ≥ 10 kOhm)	0,75 mV	
Current	4...20 mA (Ri = ~ 125 Ohm)	1...22 mA	
Current	0...20 mA (Ri = ~ 125 Ohm)	0...22 mA	
Pt 100-3-wire	-50...200°C	-58...392°F	0,1°C / 0,1°F
Pt 100-3-wire	-200...850°C	-328...1562°F	1°C / 1°F
Pt 1000-2-wire	-200...850°C	-328...1562°F	1°C / 1°F
Thermo K	-270...1350°C	-454...2462°F	1°C / 1°F
Thermo S	-50...1750°C	-328...3182°F	1°C / 1°F
Thermo N	-270...1300°C	-454...2372°F	1°C / 1°F
Thermo J	-170...950°C	-274...1742°F	1°C / 1°F
Thermo T	-270...400°C	-454...752°F	1°C / 1°F
Thermo R	-50...1768°C	-58...3214°F	1°C / 1°F
Thermo B	80...1820°C	176...3308°F	1°C / 1°F
Thermo E	-270...1000°C	-454...1832°F	1°C / 1°F
Thermo L	-200...900°C	-328...1652°F	1°C / 1°F
Frequency	0...10 kHz	0...10 kHz	0,001 Hz
NPN	0...3 kHz	0...3 kHz	0,001 Hz
PNP	0...1 kHz	0...1 kHz	0,001 Hz
Rotational speed	0...9999 1/min	0...9999 1/min	0,001 1/min
Counter	0...9999 (prescaler bis 1000)		

Ordering Codes:

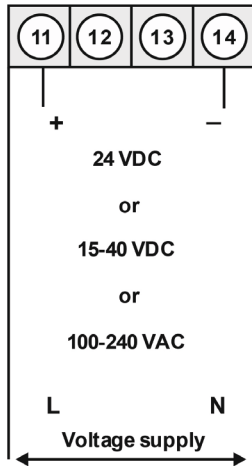
Order number	UM-05.	1.	1.	2.	1.	0.
Universal transmitter						
Supply / 1 = 24 VDC, ± 10% 2 = 100...240, VDC/AC 3 = 15...40 VDC, 20...30 VAC						
Sensor supply / 0 = without 1 = 24 VDC / 50 mA incl. digital input						
Digital input / 0 = without 1 = Interface RS232 2 = Interface RS485 3 = Bluetooth Interface 4 = Data logger 5 = Analog output						
Switch points / 0 = without switch point 1 = 2 relay outputs 2 = 2 PhotoMos outputs 3 = 2 PhotoMos- and 2 relay outputs						
Options / 0 = without 9 = please specify in clear text						



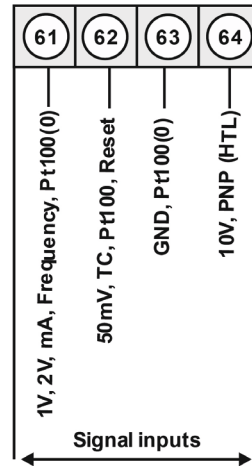
Connections:

• Multifunction measuring input

Terminal 1

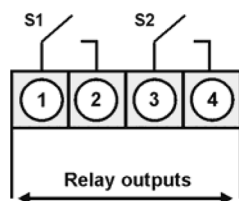


Terminal 6

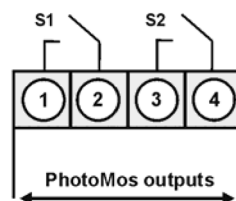


Options

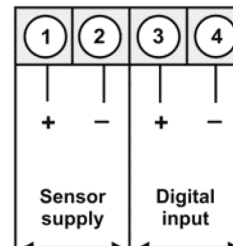
Terminal 2



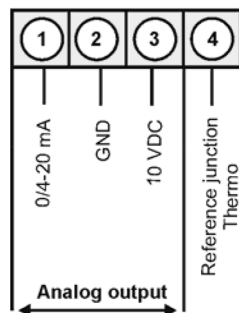
Terminal 3



Terminal 5

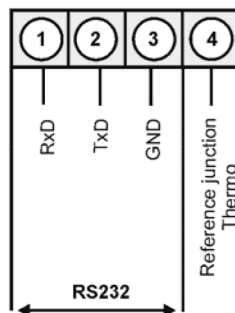


Terminal 4

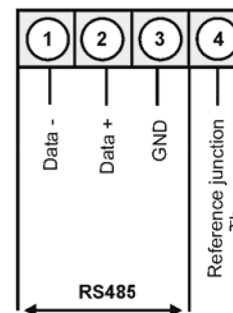


alternative to analog output

Terminal 4



or





AZ-02N

5-digit Digital Display and Control Unit



Features

/ Direct voltage and direct current

/ Direct voltage (Shunt)

/ Potentiometer

/ Resistance

/ PT100

/ Thermocouple

/ Frequency

/ AC voltage & alternating current

/ DMS-4-wire

/ Weighing technology

Description:

The AZ-02N Digital Display offers to the user everything that the current process measuring technology demands from electronic evaluation devices. This device is freely scalable and capable of utilizing a wide spectrum of input signals. Equipped with a 5-digit LED display, it optionally provides an output for sensor power supply and a power or voltage output for further processing of the measurement as well as possible setpoints.

Application:

This universal display unit is capable of processing signals from all commonly used sensors in fill level, pressure, flow control or temperature measuring technology and displaying them visually. The relay and analogue outputs freely configurable for hysteresis and range optimally evaluate and process the measurement. The AZ-02N is, therefore, also capable of serving as a control unit for simple system operations. Particularly noteworthy is the easy handling and programming of the device, which is carried out on the frontside keys and leaves no questions open. Through the highlighted properties the universal display units are suitable for practically all applications in the industrial or laboratory operation.

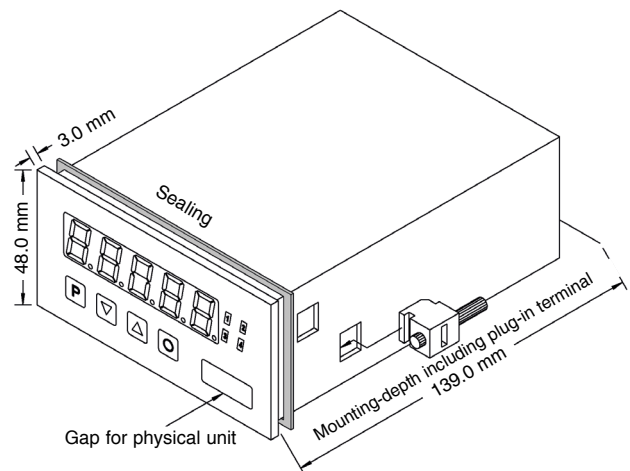


Technical Specifications:

Housing dim. /	W 96 x H48 x D120 mm incl. plug-in terminal D=139 mm
Panel cut-out /	92.0 ^{+0,8} x 45.0 ^{+0,6} mm
Fastening /	screw elements for walls up to 15 mm thick
Housing material /	PC Polycarbonate, black
Sealing material /	EPDM, 65 Shore, black
Protection class /	front side IP65 standard back side IP00
Weight /	approx.. 350 g
Connection /	plug-in terminal; line cross-section up to 2.5 mm ²
Display /	5-digit
Digit height /	14 mm
Segment colour /	red (standard), optional available in green, blue and orange
Range of display /	-19999 to 99999
Threshold /	optical display flashing
Overflow /	horizontal bars at the top
Underflow /	horizontal bars at the bottom
Display time /	0.1 .. 10 seconds
Working temp. /	0°C .. +50°C
Storing temp. /	-20°C .. +80°C
Climatic proof /	relative humidity 0 to 85% on years average without dew
On request /	devices for working temperatures of -20°C to +60°C or -40°C to +70°C

Digital input /	< 2.4 V OFF; 10 V ON; max. 30 VDC, R _i ~5 kΩ
Interface /	
Protocol:	Modbus with ASCII or RTU
RS232:	9600 Baud, no parity, 8 DataBit, 1 StopBit
Wire length:	max. 3 m
RS485:	9600 Baud, no parity, 8 DataBit, 1 StopBit
Wire length:	max. 1000 m
Memory /	EEPROM Data life ≥ 100 years at 25°C
CE-sign /	Conformity to directive 2004/108/EG
EMC /	EN 61326, EN 5501
Safety standard /	according to low voltage directive 2006/95/EG EN 61010; EN 60664-1

Dimensions in mm:



Electrical Specifications:

Supply 1 /	100-240 VAC 50/60 Hz, DC ±10% (max. 15 VA)
Supply 2 /	10-40 VDC galvanically insulated, 18-30 VAC 50/60 Hz (max. 15 VA)
Output /	
Relays:	with change-over contact 250 VAC/ 5 A, 30 VDC/ 5 A
Switching cycles:	30 x 10 ³ at 5 A, ohmic load 10 x 10 ⁶ mechanically separation as per DIN EN50178 / specifications as per DIN EN 60255
PhotoMos output:	NO-contact: 30 VDC/ AC 0.4 A
Impulse output:	max. 10 kHz (for frequency measurement)
Analog output:	0 .. 10 VDC, load ≥ 10 kΩ, 0(4) .. 20 mA, load ≤ 500 Ω, 16 Bit)
Sensor supply:	24 VDC/ 50 mA 10 VDC/ 20 mA
Bridge supply:	10 VDC/ 20 .. 40 mA/ 250 .. 500 Ω

Measuring inputs:

E1: Direct voltage / direct current

Span	-12 .. 12 V	-22 .. 24 mA
Measuring range	0 .. 10 VDC	0/4 .. 20 mA
Input resistance	R _i at ~200 kΩ	R _i at ~100 Ω
Measuring fault	0.1% of measuring range ±1 Digit	0.1% of measuring range ±1 Digit
Temperature drift	100 ppm/K	
Measuring time	0.1 .. 10.0 seconds	
Measuring principle	U/F-Converter	
Resolution	approx. 18 Bit at 1s measuring time	



E2: Direct voltage/ Direct current H-Version (High Voltage)				
Span	-600...600 VDC	-300...300 VDC	-50...50 VDC	-1...1 ADC
Measuring range	0...600 VDC	0...300 VDC	0...50 VDC	0...1 ADC
Input resistance	R_i at ~2 M Ω	R_i at ~1 M Ω	R_i at ~200 k Ω	R_i at ~0,2 Ω
Measuring fault	0.5% of measuring range			
Temperature drift	100 ppm/K			
Measuring time	0.1...10.0 seconds			
Measuring principle	U/F-Converter			
Resolution	approx. 18 Bit at 1s measuring time			

E3: Direct voltage - Shunt				
Span	-5...75 mV	-15...180 mV	-30...360 mV	-100...1200 mV
Measuring range	0...60 mV	0...150 mV	0...300 mV	0...1000 mV
Input resistance	R_i at ~12 k Ω	R_i at ~30 k Ω	R_i at ~60 k Ω	R_i at ~200 k Ω
Measuring fault	0.5% of measuring range, ± 1 Digit	0.5% of measuring range, ± 1 Digit	0.5% of measuring range, ± 1 Digit	0.5% of measuring range, ± 1 Digit
Temperature drift	100 ppm/K			
Measuring time	0.1...10.0 seconds			
Measuring principle	U/F-Converter			
Resolution	approx. 18 Bit at 1s measuring time			

E4: Potentiometer	
Span	> 1 k Ω ...< 1000 k Ω
Measuring range	0...100 %
Measuring fault	0.5% of measuring range, ± 1 Digit
Temperature drift	100 ppm/K
Measuring time	0.1...10.0 seconds
Measuring principle	U/F-Converter
Resolution	approx. 18 Bit at 1s measuring time

E5: Resistance			
Span	0...11 k Ω	0...11 k Ω	0...110 k Ω
Measuring range	0...1 k Ω	0...10 k Ω	0...100 k Ω
Measuring fault	0.5% of measuring range, ± 1 Digit	0.5% of measuring range, ± 1 Digit	0.5% of measuring range, ± 1 Digit
Temperature drift	100 ppm/K		
Measuring time	0.1...10.0 seconds		
Measuring principle	U/F-Converter		
Resolution	approx. 18 Bit at 1s measuring time		

E6: PT100 (3-/4-wire) (2-wire via Offset)		
Measuring range	-200.0...850.0 °C	-328.0...1562.0 °F
Measuring fault	0.1% of measuring range, ± 1 Digit	0.1% of measuring range, ± 1 Digit
Temperature drift	100 ppm/K	
Measuring time	0.1...10.0 seconds	
Measuring principle	U/F-Converter	
Resolution	0.1 °C or 0.1 °F	

E8: Frequency	
Signal	Pulse input, TTL, Namur, 3-wire initiator PNP/NPN
Input resistance	R_i at 24 V / 4 k Ω High/Low level > 15 V / < 4 V High/Low TTL-level > 4.6 V / < 1.9 V
Input frequency	0.01 Hz selectable up to 999.99 kHz
Measuring fault	0.05% of measuring range, ± 1 Digit

E7: Thermal elements	
Measuring range	Type L -200...900°C Type N -270...1300°C Type J -210...1200°C Type E -270...1000°C Type K -270...1372°C Type T -270...400°C Type B 80...1820°C Type R -50...1768°C Type S -50...1768°C
Measuring fault	2 K, ± 1 Digit
Temperature drift	100 ppm/K
Measuring time	0.1...10.0 seconds
Measuring principle	U/F-Converter
Resolution	0.1°C
Characteristic curve fault	< ± 1 K
Reference junction	Thermistor



E9: AC voltage, alternating current (true RMS)

Measuring range	50 VAC	10 VAC	5 AAC	1 AAC
Input resistance	R _i at ~200 kΩ	R _i at ~40 kΩ	R _i at ~0,05 Ω	R _i at ~0,2 Ω
Measuring fault	at 50 Hz to 1 kHz up to crestfactor 4 for input signals of 1% to 100% of final value			
Temperature drift	100 ppm/K			
Measuring time	0.1 . . 10.0 seconds			
Measuring principle	U/F-Converter			
Resolution	approx. 18 Bit at 1s measuring time			

E10: AC voltage, alternating current (true RMS) H-Version (High Voltage)

Measuring range	600 VAC	300 VAC	5 AAC	1 AAC
Input resistance	R _i at ~2 MΩ	R _i at ~1 MΩ	R _i at ~0,05 Ω	R _i at ~0,2 Ω
Measuring fault	at 50 Hz to 1 kHz up to crestfactor 4 for input signals of 1% to 100% of final value			
Temperature drift	100 ppm/K			
Measuring time	0.1 . . 10.0 seconds			
Measuring principle	U/F-Converter			
Resolution	approx. 18 Bit at 1s measuring time			

E11: DMS-4-wire with calibration

Sensor sensitivity	1 mV/V, 2 mV/V, 3.3 mV/V, free up to 4 mV/V with 80% calibration
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E12: Weighing technology

Sensor sensitivity	1 mV/V, 2 mV/V, 3.3 mV/V mit Tara
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Possible Configurations:

Selection / Measuring input	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12
Supply voltage 100 . . 240 VAC	x	x	x	x	x	x	x	x	x	x	x	x
Supply voltage 10 . . 40 VDC	x		x	x	x	x	x	x	x		x	x
Sensor supply 10 VDC, 20 mA	x		x									
Sensor supply 24 VDC, 50 mA	x		x					x				
2x Relay output	x	x	x	x	x	x	x	x	x	x	x	x
4x Relay output	x	x	x	x	x	x	x	x	x	x	x	x
8x PhotoMos-output	x	x	x	x	x	x	x	x	x	x	x	x
1x Analog output 0(4) . . 20 mA, 0 . . 10 VDC	x	x	x	x	x	x	x	x	x	x	x	x
2x Analog output 0(4) . . 20 mA, 0 . . 10 VDC	x	x	x	x	x	x	x	x	x	x	x	x
1x Digital input	x	x	x	x	x			x	x	x	x	x
Interface RS232	x	x	x	x	x	x	x	x	x	x	x	x
Interface RS485	x	x	x	x	x	x	x	x	x	x	x	x



Ordering Codes:

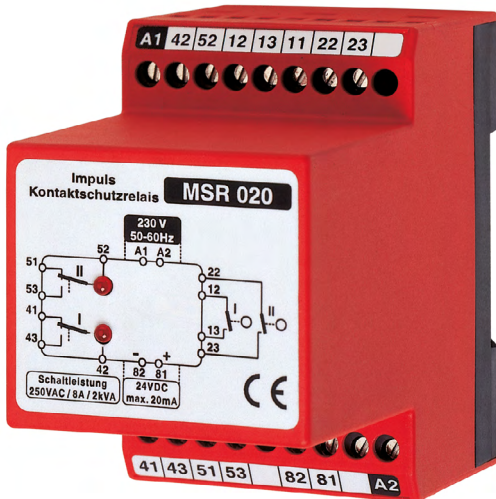
Order no.	AZ-02N.	2.	1.	1.	E1.	2.	1.	3.	1
AZ-02N Digital Display									
Size /									
2 = 96 x 48 mm									
Supply Voltage /									
1 = 100-240 VAC									
2 = 10-40 VDC, galvanic insulated									
Sensor supply (incl. digital input) /									
0 = without									
1 = 10 VDC, 20 mA									
2 = 24 VDC, 50 mA									
3 = 24 VDC, 50 mA (incl. impulse output)									
Measuring input /									
E1 = direct voltage / -current (0...10 VDC/ 0(4)...20 mA)									
E2 = direct voltage / -current H-Version									
E3 = direct voltage (Shunt)									
E4 = potentiometer 0 - 100% (> 1 kΩ...< 1000 kΩ)									
E5 = resistance (1 kΩ, 10 kΩ or 100 kΩ)									
E6 = Pt100 (3-/4-wire)									
E7 = thermocouple (type L, J, K, B, S, N, E, T, R)									
E8 = frequency (0.01 Hz...999.99 kHz)									
E9 = AC voltage, alternating current (true RMS)									
E10 = AC voltage, alternating current (true RMS) H-Version									
E11 = DMS-4-wire with calibration									
E12 = weighing technology									
Digital input /									
0 = without									
1 = 1 digital input									
2 = interface RS232 (galvanic insulated)									
3 = interface RS485 (galvanic insulated)									
4 = interface RS232 (incl. digital input)									
5 = interface RS485 (incl. digital input)									
Analog output /									
0 = without									
1 = 1 x 0(4)...20 mA, 0...10 VDC									
2 = 2 x 0(4)...20 mA, 0...10 VDC									
Switching output /									
0 = without									
1 = 2 relay outputs									
2 = 4 relay outputs									
3 = 8 PhotoMos-outputs (analog output 2 is not applicable)									
Options /									
0 = without									
1 = display colour blue (red standard)									
2 = display colour green									
3 = display colour orange									
4 = display colour tricolour (red-green-orange)									
5 = physical unit (selectable)									





MSR

Multifunctional Relay



Features

- / Protects your sensor elements
- / Practical time response
- / Additional DC voltage output

Description:

The MSR series includes the range of multifunctional relays MSR 10, MSR 11 and MSR 20 that cover all commonly known applications. Thus, the MSR 10 and the MSR 20 are purely contact protecting relays for one or two control signals which protect the contacts in measuring devices against overload due to high switching operations especially in inductive or capacitive loads. In these units, a smartly selected drop-out delay ensures that highly frequent switching of sensor contacts is disregarded and, therefore, the switching points are unambiguously defined. The MSR 11 has a highly qualified bistable interval relay with self-preservation that is capable of controlling the pump completely in combination with two fill level switches.

Application:

Naturally, this unit also protects the contacts of the switch connected to it against overloads. The MSR series of devices is designed for a standard supply voltage of 230 V AC, but they possess also a 24 V DC DC voltage output. Optionally, they are available for connecting to 115 V AC, 24 V AC and 24 V DC. On request, the MSR 10, MSR 11 and MSR 20 can be provided with 24 V DC PNP electronic outputs. The polyamide housing has a housing of type IP 20 protection; however, it can be equipped with an outer housing in IP 65 available as accessory. The device can be assembled on a standard mounting rail as per DIN 50022 or by means of an adapter for individual mounting through screw fitting.



Versions:

MSR Multifunctional Relay

Type: MSR10

monostable contact protective relay for single contacts

Type: MSR11

bistable interval relay with locking feature

Type: MSR20

monostable contact protective relay for double contacts

Supply voltage:

standard 230 VAC;

optional 115 VAC, 24 VAC or 24 VDC

Electrical Specifications:

Standards /

EN 50 178:	electrical safety
EN 61 000-6-2:	stability
EN 61 000-6-3:	fault reporting
EN 60 947-5-1:	low voltage switch-gear

Auxiliary power /

Supply voltage / 230 VAC (standard),
50 to 60 Hz

Consumption / MSR 10 typ. 6 VA
MSR 11 typ. 6 VA
MSR 20 typ. 6 VA

Control signals /

Control voltage:	35 to 40 VDC Pulse
Pulse-Pause ratio:	0.5 ms / 50 ms (+/-20%)
Switching threshold:	9.7 VDC (+/-10%)
Input impedance:	3300 Ohm, 100 nF (+/-20%)
Line and contact resistance:	max. 4700 Ohm, 47 nF

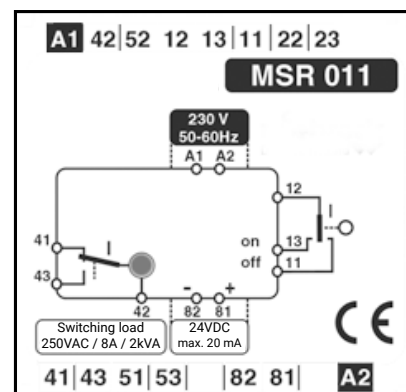
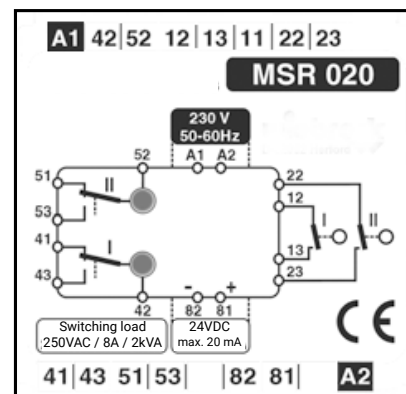
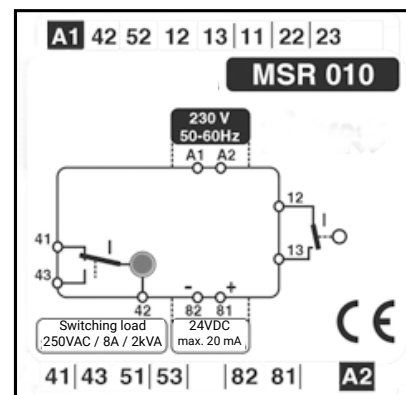
Output /

Relay output:	1 or 2 potential-free change-over
Draw-up and drop-out delay:	10 ms / 450 ms +/- 20% + 50 ms
Contact material:	AgCdO or AgNi+Au
Switching load:	max. 250 VAC; 8 A min. 24 VDC; 100 mA
Short-circuit fuse element:	F 10 A (max. short-circuit current < 100 A)
Voltage output:	(cond. short-circuit protected)
Voltage:	24 VDC (+/-10%)
Load:	max. 20 mA

Technical Specifications:

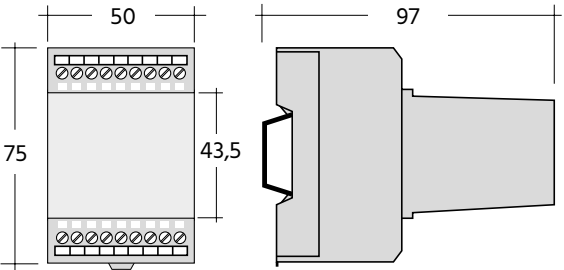
max. Ambient temp. /	0°C to 70°C
Protection class /	IP 20
Assessed insulation voltage /	250 VAC
Housing /	polyamide 6.6
Fixture /	standard rail 35 x 7.5 DIN50022
Connection cross-sections /	0.5 bis 2.5 mm ² (single or fine-wire)

(for individual fixture an adapter is provided)





Dimensions in mm:



Ordering Codes:

Order number	MSR.	10.	2
MSR Multifunctional Relay			
Type /			
10 = monostable contact protective relay for single contacts			
11 = bistable interval relay with locking feature			
20 = monostable contact protective relay for double contacts			
Supply voltage /			
1 = 230 VAC standard			
2 = 115 VAC			
3 = 24 VAC			
4 = 24 VDC			





MV-01

2/2-way Solenoid Valve for Fluids



Features

/ Nominal diameters 1/4"-2"

/ Pressure up to 10 bar

/ 24 V DC and all common AC variants

/ Forced-lifting

Description:

The pilot-controlled full-way valve with servo membrane and forced-lifting is currentless closed. In this status, the core closes the pilot-control boring in the center of the membrane holder due to spring action. The media pressure above the membrane builds up over a membrane throttle boring and closes the valve. When the valve's magnetic coil is supplied with current, the resulting magnetic field lifts up the core which first opens the pilot-control boring to let the closing pressure above the membrane weaken and the valve can open fully due to the crescent media pressure and the coil's magnetic force.

Application:

Magnetic valves are primarily used in processes in which flow of fluids need to be switched on or shut off frequently and at precisely defined point of time. The simple but reliable devices are very frequently deployed especially in the dosing technology. A variety of possible material combinations for the valve body are in brass or stainless steel and the membrane materials like NBR, FKM or EPDM, as well as the available operating voltages in the AC and DC range, render the MV-01 into one of the most universally applicable solenoid valve in the market.



Versions:

MV-01 Solenoid Valve

Housing material: As materials for the housing brass or stainless steel can be selected. In addition, other materials such as brass nickel-plated are available on request.

Cv-value: For these flow values of water as the medium at 20°C (from 1.3 to 30.0 m³/h) exactly 1 bar pressure will drop at the relevant valve. These are taken into regard so as to assess the loss of pressure on the valve with reference to the entire range.

Connection: All cylindrical thread sizes between G1/4" and G2" are available. However, the relationship between the Cv- value and the thread must be taken into consideration.

Supply voltage: Besides 24 V DC also all commonly used variants of AC voltage can be supplied.

Membrane material: Among plastic materials, NBR (Perbunan®), FKM (Viton®) and EPDM are available. Depending on the medium and the required temperature any of the alternatives can be supplied. NBR is used for neutral fluids like water, hydraulic oil and oils and greases without additives. FKM is used for Per-solutions and hot oils with additives and EPDM should be used for oil- and greaseless fluids like hot water and alkaline washing and bleaching lye.

Accessories: Besides the required standard plug socket also sockets with LED for switching status display, varistor for surge voltage protection or integrated rectifier can be supplied.

Ordering Codes:

Order number	MV-01.	□□□□□.	2
MV-01 Solenoid Valve			
Type-ID (see table) / Example A041M: brass housing, NBR diaphragm, polyamide coil, process connection G 1/2", Cv-value 3.6 m ³ /h, voltage 24 VDC			
Accessories / 0 = none 1 = device plug socket DIN EN 175301-803 Form A 2 = device plug socket DIN EN 175301-803 Form A with LED 3 = device plug socket DIN EN 175301-803 Form A with LED and varistor 4 = device plug socket DIN EN 175301-803 Form A with LED, varistor and rectifier			

Technical Specifications:

Housing material /	brass acc. to DIN EN 50930-6, stainless steel 1.4408 (316), brass nickel-plated (5μ)
Intern. components /	
Brass housing	brass, stainless steel and PPS
St.-steel housing:	stainless steel and PPS
max. Pressure /	10 bar
Medium /	
NBR:	neutral fluids, water, hydraulic oil, oil without additives
FKM:	Per-solutions, hot oils with additives
EPDM:	oil- and greaseless fluids
max. Temperature /	
NBR:	-10°C. . .+80°C
FKM:	with polyamid coil 0°C. . .+90°C, with epoxy coil 0°C. . .+120°C
EPDM:	with polyamid coil -30°C. . .+90°C, with epoxy coil -30°C. . .+100°C
max. Ambient temp. /	+55°C
Mounting position /	any, preferably with drive towards top

Electrical Specifications:

Supply /	24 VDC or 24 VAC (50 Hz) and 230 VAC (50 Hz), others on request
Voltage tolerance /	± 10%
Protection class /	IP65 with cable plug
El. connection /	plug DIN EN 175301-803 Form A
Response time¹⁾ /	0.1. . .4 seconds (depending on nominal diameter and differential pressure)

¹⁾ Measured at valve outlet at 6 bar and +20°C

Opening	pressure build-up	0. . .90%
Closing	pressure drop	100. . .10%



Table 1: Solenoid valves with brass housing, DN 10-40 mm

1a: Brass housing, NBR diaphragm, polyamide coil, medium temperature: -10°C. . +80°C

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]			[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 1/4"	10	1.3	0 - 10	0.3	0.5	A011M	A012M	A013M
G 3/8"	10	1.9	0 - 10	0.3	0.5	A021M	A022M	A023M
G 1/2"	10	1.9	0 - 10	0.4	0.5	A031M	A032M	A033M
G 1/2"	13	3.6	0 - 10	0.4	0.5	A041M	A042M	A043M
G 3/4"	13	3.6	0 - 10	0.5	0.6	A051M	A052M	A053M
G 3/4"	20	8.3	0 - 10	0.7	0.8	A061M	A062M	A063M
G 1"	20	8.3	0 - 10	0.9	1.0	A071M	A072M	A073M

1b: Brass housing, NBR diaphragm, epoxy coil, medium temperature: -10°C. . +80°C

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]			[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 1"	25	11	0 - 10	1.6	2.2	B011M	B012M	B013M
G 1 1/4"	25	11	0 - 10	1.7	2.3	B021M	B022M	B023M
G 1 1/4"	40	23	0 - 10	2.9	3.4	B031M	B032M	B033M
G 1 1/2"	40	30	0 - 10	3.2	3.7	B041M	B042M	B043M
G 2"	40	30	0 - 10	3.4	3.9	B051M	B052M	B053M

1c: Brass housing, FKM diaphragm, epoxy coil, medium temperature: 0°C. . +120°C

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]			[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 1/4"	10	1.3	0 - 10	0.3	0.5	C011M	C012M	C013M
G 3/8"	10	1.9	0 - 10	0.3	0.5	C021M	C022M	C023M
G 1/2"	10	1.9	0 - 10	0.4	0.5	C031M	C032M	C033M
G 1/2"	13	3.6	0 - 10	0.4	0.5	C041M	C042M	C043M
G 3/4"	13	3.6	0 - 10	0.5	0.6	C051M	C052M	C053M
G 3/4"	20	8.3	0 - 10	0.7	0.8	C061M	C062M	C063M
G 1"	20	8.3	0 - 10	0.9	1.0	C071M	C072M	C073M
G 1"	25	11	0 - 10	1.6	2.2	C081M	C082M	C083M
G 1 1/4"	25	11	0 - 10	1.7	2.3	C091M	C092M	C093M
G 1 1/4"	40	23	0 - 10	2.9	3.4	C101M	C102M	C103M
G 1 1/2"	40	30	0 - 10	3.2	3.7	C111M	C112M	C113M
G 2"	40	30	0 - 10	3.4	3.9	C121M	C122M	C123M

1d: Brass housing, EPDM diaphragm, polyamide coil, medium temperature: -30°C. . +90°C

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]			[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 1/4"	10	1.3	0 - 10	0.3	0.4	D011M	D012M	D013M
G 3/8"	10	1.9	0 - 10	0.3	0.4	D021M	D022M	D023M
G 1/2"	10	1.9	0 - 10	0.4	0.5	D031M	D032M	D033M
G 1/2"	13	3.6	0 - 10	0.4	0.5	D041M	D042M	D043M
G 3/4"	13	3.6	0 - 10	0.5	0.6	D051M	D052M	D053M
G 3/4"	20	8.3	0 - 10	0.7	0.8	D061M	D062M	D063M
G 1"	20	8.3	0 - 10	0.9	1.0	D071M	D072M	D073M

**1e: Brass housing, EPDM diaphragm, epoxy coil, medium temperature: -30°C. . .+100°C**

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]			[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 1"	25	11	0 - 10	1.6	2.2	E011M	E012M	E013M
G 1 1/4"	25	11	0 - 10	1.7	2.3	E021M	E022M	E023M
G 1 1/4"	40	23	0 - 10	2.9	3.4	E031M	E032M	E033M
G 1 1/2"	40	30	0 - 10	3.2	3.7	E041M	E042M	E043M
G 2"	40	30	0 - 10	3.4	3.9	E051M	E052M	E053M

Table 2: Solenoid valves with st. steel housing, DN 10-40 mm**2a: Stainless steel housing, NBR diaphragm, polyamide coil, medium temperature: -10°C. . .+80°C**

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]			[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 3/8"	10	1.9	0 - 10	0.3	0.4	A021E	A022E	A023E
G 1/2"	13	3.6	0 - 10	0.4	0.5	A041E	A042E	A043E
G 3/4"	20	8.3	0 - 10	0.7	0.8	A061E	A062E	A063E
G 1"	20	8.3	0 - 10	0.9	1.0	A071E	A072E	A073E

2b: Stainless steel housing, NBR diaphragm, epoxy coil, medium temperature: -10°C. . .+80°C

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]			[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 1"	25	11	0 - 10	1.6	2.2	B011E	B012E	B013E
G 1 1/4"	25	11	0 - 10	1.7	2.3	B021E	B022E	B023E
G 1 1/2"	40	30	0 - 10	3.2	3.7	B041E	B042E	B043E
G 2"	40	30	0 - 10	3.4	3.9	B051E	B052E	B053E

2c: Stainless steel housing, FKM diaphragm, epoxy coil, medium temperature: 0°C. . .+120°C

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]			[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 3/8"	10	1.9	0 - 10	0.3	0.4	C021E	C022E	C023E
G 1/2"	13	3.6	0 - 10	0.4	0.5	C041E	C042E	C043E
G 3/4"	20	8.3	0 - 10	0.7	0.8	C061E	C062E	C063E
G 1"	20	8.3	0 - 10	0.9	1.0	C071E	C072E	C073E
G 1"	25	11	0 - 10	1.6	2.2	C081E	C082E	C083E
G 1 1/4"	25	11	0 - 10	1.7	2.3	C091E	C092E	C093E
G 1 1/2"	40	30	0 - 10	3.2	3.7	C111E	C112E	C113E
G 2"	40	30	0 - 10	3.4	3.9	C121E	C122E	C123E

2d: Stainless steel housing, EPDM diaphragm, polyamide coil, medium temperature: -30°C. . .+90°C

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]			[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 3/8"	10	1.9	0 - 10	0.3	0.4	D021E	D022E	D023E
G 1/2"	13	3.6	0 - 10	0.4	0.5	D041E	D042E	D043E
G 3/4"	20	8.3	0 - 10	0.7	0.8	D061E	D062E	D063E
G 1"	20	8.3	0 - 10	0.9	1.0	D071E	D072E	D073E


2e: Stainless steel housing, EPDM diaphragm, epoxy coil, medium temperature: -30°C. . .+100°C

Thread	ND	Cv-Value ^{3) 5)}	Pressure ⁴⁾	Weight		Ordering code: Type-ID		
	[mm]	[m ³ /h]	[bar]	[kg] AC	[kg] DC	24 VDC	24 VAC, 50 Hz	230 VAC, 50 Hz
G 1"	25	11	0 - 10	1.6	2.2	E011E	E012E	E013E
G 1 1/4"	25	11	0 - 10	1.7	2.3	E021E	E022E	E023E
G 1 1/2"	40	30	0 - 10	3.2	3.7	E041E	E042E	E043E
G 2"	40	30	0 - 10	3.4	3.9	E051E	E052E	E053E

³⁾ Measured at +20°C, 1 bar pressure at valve inlet and free outlet

⁴⁾ Pressure data [bar]: Overpressure with respect to atmospheric pressure

⁵⁾ A minimum differential pressure of 0.5 bar is required for full (100%) opening

Table 3: Power consumption

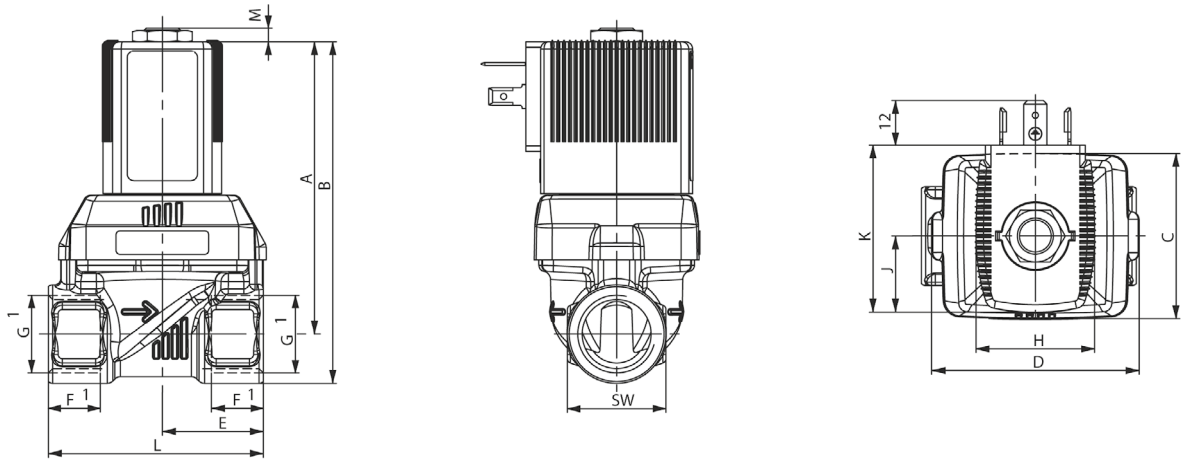
ND	Thread	Coil size width [mm]		Power consumption ⁶⁾			Insulation class coil ⁷⁾		Weight [kg]	
		AC	DC	Inrush AC [VA]	Operating hot coil		Seal material FKM	Seal material NBR & EPDM	Brass coil AC	Brass coil DC
					AC [VA/W]	DC [W]				
10	G 1/4"	32	40	34	14/8	10 (11)	H	B	0.33	0.41
10	G 3/8"	32	40	34	14/8	10 (11)	H	B	0.33	0.41
10	G 1/2"	32	40	34	14/8	10 (11)	H	B	0.37	0.44
13	G 1/2"	32	40	36	14/8	10 (11)	H	B	0.46	0.54
13	G 3/4"	32	40	36	14/8	10 (11)	H	B	0.49	0.57
20	G 3/4"	32	40	38	14/8	10 (11)	H	B	0.74	0.82
20	G 1"	32	40	38	14/8	10 (11)	H	B	0.95	1.03
25	G 1"	42	65	150	37/16	28 (29)	H	H	1.6	2.2
25	G 1 1/4"	42	65	150	37/16	28 (29)	H	H	1.7	2.3
40	G 1 1/4"	42	65	190	37/16	28 (29)	H	H	3.2	3.7
40	G 1 1/2"	42	65	190	37/16	28 (29)	H	H	3.2	3.7
40	G 2"	42	65	190	37/16	28 (29)	H	H	3.38	3.9

⁶⁾ Values in brackets applies at coil temperature +20°C

⁷⁾ H epoxy coil, B polyamide coil



Table 4: Dimensions (mm)



3a: Dimensions (AC-coil, 32 mm)

DN	A	B	C	D	E (MS)	E (VA)	F1	G1	H	J	K	L (MS)	L (VA)	SW	M
10	67.4	78.4			22	22	12	G 1/4"				50	50	22	
	67.4	78.4	36	46	22	22	12	G 3/8"	32	20.5	45	50	50	22	3.7
	69.4	82.9			24.5	24.5	14	G 1/2"				50	55	27	
13	78.9	92.4			27.2	32.5	14	G 1/2"				58	65	27	
	80.9	96.9	44.5	56	32.5	32.5	16	G 3/4"	32	20.5	45	65	65	32	3.7
20	93.4	109.4			37	37	16	G 3/4"				80	80	32	
	95.9	116.4	65	76.6	37.5	37.5	18	G 1"	32	20.5	45	80	80	41	3.7

3b: Dimensions (DC-coil, 40 mm)

DN	A	B	C	D	E (MS)	E (VA)	F1	G1	H	J	K	L (MS)	L (VA)	SW	M
10	67.4	78.4			22	22	12	G 1/4"				50	50	22	
	67.4	78.4	36	46	22	22	12	G 3/8"	40	23.5	51	50	50	22	3.7
	69.4	82.9			24.5	24.5	14	G 1/2"				50	55	27	
13	79.3	92.8			27.2	32.5	14	G 1/2"				58	65	27	
	81.3	97.3	44.5	56	32.5	32.5	16	G 3/4"	40	23.5	51	65	65	32	3.7
20	93.8	109.8			37	37	16	G 3/4"				80	80	32	
	96.3	116.8	65	76.6	37.5	37.5	18	G 1"	40	23.5	51	80	80	41	3.7

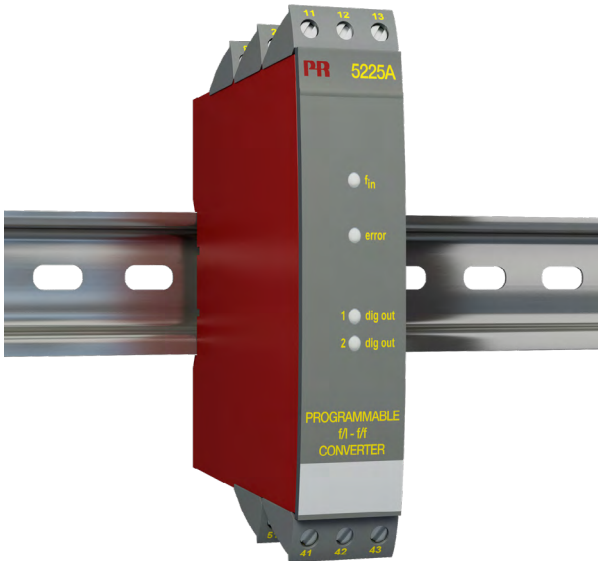
3c: Dimensions (AC-coil, 42 mm / DC-coil 65 mm)

DN	A	B	C	D	E (MS)	E (VA)	F1	G1	H	J	K	L (MS)	L (VA)	SW	M
40	158.3	193.3			64	64	24	G 2"				132	132	70	
	152.3	182.3	104.5	117	61	61	22	G 1 1/2"	65	37.5	72	126	126	60	7
	146.8	171.8			61	61	20	G 1 1/4"				126	126	50	
25	141.3	166.3			46	46	20	G 1 1/4"				95	95	50	
	136.3	156.8	77	88	46	46	18	G 1"	65	37.5	72	95	95	41	7
40	158.3	193.3			64	64	24	G 2"				132	132	70	
	152.3	182.3	104.5	117	61	61	22	G 1 1/2"	42	27	55.5	126	126	60	7
	146.8	171.8			61	61	20	G 1 1/4"				126	126	50	
25	141.3	166.3			46	46	20	G 1 1/4"				95	95	50	
	136.3	156.8	77	88	46	46	18	G 1"	42	27	55.5	95	95	41	7



PR-5225

Railmounted F/F- or F/I-converter



Features

- / Pulse conditioning
- / Frequency generator
- / Freq. division or multiplication
- / Buffer for fast pulse trains
- / 4...20 mA or 0...10 VDC output
- / PNP/NPN- or Relay outputs
- / Input range 0...20 kHz
- / Namur, Tacho, NPN, PNP, TTL
- / Four front-LEDs

Description:

PR-5225 converts the output frequency of nearly all Profimess flowmeters or any other units with pulse output, to an analogue output, which may be a power signal of any span between 0 mA and 20 mA with a minimum width of 5 mA or a voltage signal of either 0...1 VDC or 0...10 VDC gripped of at an internal shunt. Alternatively PR-5225 may be operated as a frequency converter, which either transforms the signal of too slow sensors up or the signal of too fast sensors down to a usable frequency. Even an operation mode as frequency generator e.g. as clock generator or time base is possible. If the FIFF-mode is chosen, PR-5225 outputs the evaluated frequency and the analogue signal simultaneously.

Application:

Pulse signals of flowmeters in practice often have to be converted into analogue outputs, because the downstream evaluating units do usually not possess any slots for frequency-based signals. Also a frequency adaption is frequently necessary, whenever the inputs of the PLC do not work with too high frequencies. PR-5225 offers therefore a reliable, cost-effective solution. The emitted pulses of PR-5225 are usually much cleaner than those of the connected flowmeters, nevertheless a 50 Hz low-pass filter can be factory-set, to fade out high-frequent interfering signals.



Technical Specifications:

Protection class /	IP20
Temperature range /	-20°C...+60°C
Calibration temperature /	+20°C...+28°C
rel. Humidity /	< 95 % RH (non-cond.)
Dimensions (HxWxD) /	109 x 23.5 x 130 mm
Weight /	app. 190 g
DIN rail type /	DIN 46277
Wire size /	max. 1 x 2.5 mm ² stranded wire
Screw terminal torque /	0,5 Nm

Electrical Specifications:

Supply voltage /	19.2...28.8 VDC
Power consumption /	max. 3.5 W
Internal consumption /	1.7 W
Warm-up time /	30 s
Power-up delay digital outputse /	0...999 s factory adjustable
Signal-noise ratio /	min. 60 dB
Response times /	
analogue output:	< 60 ms + 1 period
digital output:	< 50 ms + 1 period
concurrent f/i and f/f:	< 80 ms + 1 period
Effect of supply voltage /	≤ 0.002 % of span per %V
Temperature coefficient /	< ± 0.01% of span per °C
Linearity error /	< ± 0.1% of span
EMC-immunity influence /	< ± 0.5%
Auxiliary voltages /	
Supply NAMUR:	8.3 V ± 0.5 VDC / 8 mA
Supply S0:	17 V / 20 mA
Supply NPN / PNP:	17 V / 20 mA
Additional supply:	5...17 V / 20 mA factory adjustable

Inputs:

Common specifications /	
Input range:	0...20 kHz
max. Offset:	50% of selected max. frequency
min. Frequency:	0.001 Hz
Low cut-off frequency:	0.001 Hz
min. Pulse width:	25 µs
min. Period time:	50 µs
max. Frequency:	20 kHz
Trigger level:	0.025...6.5 V (nom.), factory adjustable
Trigger level LOW:	50 % of trigger HIGH

NAMUR-input acc. to DIN 19234 /

Trigger level LOW:	≤ 1.2 mA
Trigger level HIGH:	≥ 2.1 mA
Input impedance:	1000 Ω
Sensor break:	≤ 0.1 mA
Short-circuit:	≥ 7 mA
Response time:	≤ 400 ms

Tacho-input /

Trigger level LOW:	≤ -50 mV
Trigger level HIGH:	≥ +50 mV
Input impedance:	≥ 100 kΩ
max. Input voltage:	80 V AC pp

NPN-/PNP-input /

Trigger level LOW:	≤ 4,0 V
Trigger level HIGH:	≥ 7,0 V
Standard input impedance:	3.48 kΩ
Input impedance special version:	13.3 kΩ / NPN

TTL-input /

Trigger level LOW:	≤ 0.8 V DC
Trigger level HIGH:	≥ 2.0 V DC
Input impedance:	≥ 100 kΩ

S0-input acc. to DIN 43864 /

Trigger level LOW:	≤ 2.2 mA
Trigger level HIGH:	≥ 9.0 mA
Input impedance:	800 Ω

Outputs:

Digital outputs (PNP/NPN) /

max. Current source:	30 mA
max. Current sink:	130 mA
max. Voltage:	28.5 V

Power output /

Signal range:	0. . 20 mA
min. Span:	5 mA
Signal dynamics:	16 bit
max. Offset:	50% of selected max. value
Updating time:	max. 20 ms
Updating time for concurrent f/f and f/i:	max. 40 ms
max. Load:	20 mA / 600 Ω / 12 VDC
Load stability:	≤ 0.01% of span per 100 Ω
Current limit:	< 23 mA

Voltage output through internal shunt /

Signal range:	0. . 10 VDC
min. Span:	250 mV
max. Offset:	50% of selected max. value
Load:	min. 500 kΩ

FF-converter output /

Signal range:	0. . 1000 Hz
Multiplicator / Divisor:	1. . 1000000
min. Pulse width:	500 μs
max. Pulse width:	999 ms
max. Duty Cycle:	50 %

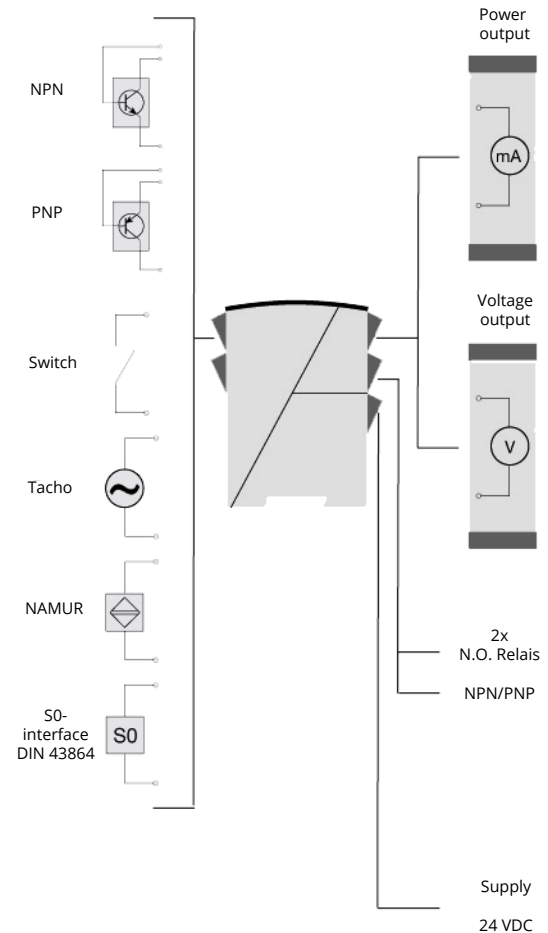
Frequency generator /

min. Periodic time:	50 μs
max. Frequency:	20 kHz
Duty Cycle:	50 %

Relay outputs /

max. Output frequency:	20 Hz
Isolation voltage test / operation:	3.75 kV AC / 250 V AC
max. Voltage:	250 VRMS
max. Current:	2 A AC
max. Power (AC):	500 VA
max. Relay load at 24 VDC:	1 A

Connections:



Ordering Codes:

Order number	PR-5225.	1.	FI
PR-5225 Railmounted F/F- or F/I-Converter			
Digital outputs /			
1 = two PNP / NPN-outputs			
2 = two relay outputs (max. 20 Hz)			
Mode of operation /			
FI = F/I-converter			
digital outputs are configured as setpoint outputs			
analogue output is switched on			
FF = F/F-converter			
digital output 1 outputs the evaluated frequency			
analogue output is switched off			
FG = Frequency generator			
digital output 1 outputs the selected frequency			
analogue output is switched off			
FIFF = F/I and F/F-converter			
digital output 1 outputs the evaluated frequency,			
digital output 2 is configured as setpoint			
analogue output is switched on			

Please specify the analogue output range (how many mA at what frequency) and the setpoints for increasing or decreasing values in % (for FI or FIFF), the divisor or multiplicator (for FF or FIFF) respectively the generated frequency (for FG) in clear text. Please specify additionally the mode of the digital outputs (PNP or NPN for transistor outputs respectively open-circuit current or closed current for relay outputs).



Electrical Connections:

